

03/26/04

Re: 10/085607

**AU 2822**

Examiner Lewis,

**JEF 5A30**

Please find attached first-pass prior-art search results from the patent and non-patent abstract databases. The results were based on claims and statements of technical problems and solutions. Tagged records might be worth your review as well as the rest of the references provided.

If you need further searching or have questions or comments, please let me know.

Thank you,



Irina Speckhard  
STIC-EIC2800  
272-2554  
JEF 4B59

**SEARCH REQUEST FORM** Scientific and Technical Information Center - EIC2800  
Rev. 8/27/01 This is an experimental format -- Please give suggestions or comments to Jeff Harrison, CP4-9C18, 306-5429.

Date <u>3/25/04</u>	Serial # <u>161085,609</u>	Priority Application Date _____
Your Name <u>M. Lewis</u>	Examiner # _____	
AU <u>2802</u>	Phone <u>541360</u>	Room <u>1092-W38</u>
In what format would you like your results? Paper is the default.		<input checked="" type="radio"/> PAPER <input type="radio"/> DISK <input type="radio"/> EMAIL

If submitting more than one search, please prioritize in order of need.

The EIC searcher normally will contact you before beginning a prior art search. If you would like to sit with a searcher for an interactive search, please notify one of the searchers.

Where have you searched so far on this case?

Circle: USPT DWPI EPO Abs JPO Abs IBM TDB

Other: \_\_\_\_\_

What relevant art have you found so far? Please attach pertinent citations or Information Disclosure Statements.

What types of references would you like? Please checkmark:

Primary Refs  Nonpatent Literature  Other \_\_\_\_\_  
Secondary Refs  Foreign Patents  \_\_\_\_\_  
Teaching Refs  \_\_\_\_\_

What is the topic, such as the novelty, motivation, utility, or other specific facets defining the desired focus of this search? Please include the concepts, synonyms, keywords, acronyms, registry numbers, definitions, structures, strategies, and anything else that helps to describe the topic. Please attach a copy of the abstract and pertinent claims.

Claims 1-8

Problem: See Pages 1-7  
Solution: 11 11 7-15

Staff Use Only		Type of Search	Vendors
Searcher: <u>Jeff Lewis</u>	Searcher Phone: _____	Structure (#) _____	STN <input checked="" type="checkbox"/>
Searcher Location: STIC-EIC2800, CP4-9C18	Date Searcher Picked Up: <u>3/25/04</u>	Bibliographic <input checked="" type="checkbox"/>	Dialog <input checked="" type="checkbox"/>
Date Completed: <u>3/26/04</u>	Searcher Prep/Rev Time: <u>180</u>	Litigation _____	Questel/Orbit _____
Online Time: <u>150</u>	Other <u>✓ all</u>	Fulltext _____	Lexis-Nexis _____
		Patent Family <input checked="" type="checkbox"/>	WWW/Internet _____
		Other _____	Other _____



# STIC Search Results Feedback Form

## EIC 2800

Questions about the scope or the results of the search? Contact **the EIC searcher or contact:**

**Jeff Harrison, EIC 2800 Team Leader**  
**571-272-2511, JEF 4B68**

### **Voluntary Results Feedback Form**

- *I am an examiner in Workgroup:*  Example: 2810
- *Relevant prior art found, search results used as follows:*
- 102 rejection
  - 103 rejection
  - Cited as being of interest.
  - Helped examiner better understand the invention.
  - Helped examiner better understand the state of the art in their technology.

*Types of relevant prior art found:*

- Foreign Patent(s)
- Non-Patent Literature  
(journal articles, conference proceedings, new product announcements etc.)

➤ *Relevant prior art not found:*

- Results verified the lack of relevant prior art (helped determine patentability).
- Results were not useful in determining patentability or understanding the invention.

**Comments:**

Drop off or send completed forms to STIC/EIC2800, CP4-9C18, 571-272-2511



03/25/2004

10/085, 607

25mar04 13:01:45 User267149 Session D1309.1

SYSTEM:OS - DIALOG OneSearch

File 2:INSPEC 1969-2004/Mar W2

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\*File 2: Alert feature enhanced for multiple files, duplicates removal, customized scheduling. See HELP ALERT.

File 6:NTIS 1964-2004/Mar W3

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File 8:Ei Compendex(R) 1970-2004/Mar W1

(c) 2004 Elsevier Eng. Info. Inc.

File 34:SciSearch(R) Cited Ref Sci 1990-2004/Mar W3

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File 434:SciSearch(R) Cited Ref Sci 1974-1989/Dec

(c) 1998 Inst for Sci Info

File 35:Dissertation Abs Online 1861-2004/Feb

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File 65:Inside Conferences 1993-2004/Mar W3

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File 94:JICST-EPlus 1985-2004/Mar W2

(c) 2004 Japan Science and Tech Corp(JST)

File 99:Wilson Appl. Sci & Tech Abs 1983-2004/Feb

(c) 2004 The HW Wilson Co.

File 144:Pascal 1973-2004/Mar W2

(c) 2004 INIST/CNRS

File 305:Analytical Abstracts 1980-2004/Mar W3

(c) 2004 Royal Soc Chemistry

\*File 305: Alert feature enhanced for multiple files, duplicate removal, customized scheduling. See HELP ALERT.

File 315:ChemEng & Biotec Abs 1970-2004/Feb

(c) 2004 DECHEMA

File 350:Derwent WPIX 1963-2004/UD,UM &UP=200419

(c) 2004 Thomson Derwent

\*File 350: For more current information, include File 331 in your search.  
Enter HELP NEWS 331 for details.

File 347:JAPIO Nov 1976-2003/Nov(Updated 040308)

(c) 2004 JPO & JAPIO

\*File 347: JAPIO data problems with year 2000 records are now fixed.  
Alerts have been run. See HELP NEWS 347 for details.

File 344:Chinese Patents Abs Aug 1985-2004/Mar

(c) 2004 European Patent Office

File 371:French Patents 1961-2002/BOP1 200209

(c) 2002 INPI. All rts. reserv.

\*File 371: This file is not currently updating. The last update is 200209.

Set	Items	Description
S1	3651324	LIGHT??????()EMIT??????() (DIOD? ? OR DEVICE? ?) OR LED? ? OR LUMIN?????? OR PHOTOILLUMINAT? OR ILLUMINAT? OR ILLUM? - OR ILLUMINE? OR LASER? ? OR PLD OR ELECTROLUMIN?
S2	9532	CC=B4260 OR MC=(S02-K04C OR S04-B04A OR S06-A03E1 OR S06-B- 01B2A OR T01-C04C)
S3	44935	LIGHT??????(3N)RAY???
S4	3685350	S1:S3
S5	68316	LIGHT?(3N)EMIT?(1N) (ELEMENT? ? OR LAYER??? OR FILM??? OR C- OAT??? OR MULTILAYER??? OR MULTI()LAYER???? OR SPACER??? OR - INTERLAYER??? OR INTER()LAYER???? OR MULTIPLE()LAYER? ?)
S6	12079	ELECTRO()LUMINESCEN?(2N)ELEMENT? ? OR EL(2N)ELEMENT? ? OR - ELECTROLUMINESCENT(3N)ELEMENT? ?
S7	76928	S5:S6
S8	474826	LIGHT?(3N) (SENSOR OR SENSING OR SENSE OR SENSING OR SWITCH? OR TRANSPAREN? OR EMIT?)
S9	55918	(MONITOR????? OR MEASUR?????? OR TEST?????? OR CHECK??- ?? OR EXAMIN????? OR ANALYS????? OR ANALYZ?????? OR VERIF?- ?????? OR IDENTIF?????? OR DETECT?????? OR SENS??????)- (3N)LUMIN?
S10	27757	LUMIN?(3N)INTENS?
S11	74350	(LOWER OR UPPER)(3N) ( (MICRO) (W) (ELECTRONIC? OR CIRCUIT? ? OR CHIP? ?) OR CHIP? ? OR MICROCIRCUIT? ? OR DIE? ? OR LOGIC(- W)CIRCUIT? ? OR WAFER? ? OR MICROELECTRONIC OR DICE OR ELECTR- ODE? ?)
S12	637954	CATHOD? OR ANOD?
S13	24295285	SUBSTRAT? OR SURFACE? OR BASE? OR SUBSTRUCT? OR UNDERSTRUC- T? OR UNDERLAY? OR FOUNDATION? OR PANE? OR DISK? OR DISC? OR - WAFER? OR CC=(A6855 OR A8115 OR B0520 OR B2570) OR MC=(T03-A0- 1B OR T03-A01B1) OR IC=G11B-005/704
S14	51144	S4 AND S7
S15	44657	S14 AND S8
S16	320	S15 AND S9
S17	32	S16 AND S10
S18	1	S17 AND S11
S19	31	S17 NOT S18
S20	1	S19 AND S12
S21	30	S19 NOT S20
S22	17	S21 AND S13
S23	16	RD (unique items)
S24	13	S21 NOT S22
S25	13	RD (unique items)
S26	43269	S1 AND S5
S27	2913	S26 AND S6
S28	85	S27 AND S11
S29	4	S28 AND S10
S30	4	RD (unique items)
S31	81	S28 NOT S29
S32	81	S31 NOT S18, S20, S21
S33	81	S32 AND S8
S34	0	S33 AND S9
S35	1	S33 AND S12
S36	80	S33 NOT S35
S37	73	S36 AND S13
S38	0	S37 AND S3
S39	30995	S1 AND (LUMIN?(3N)(INTENS? OR STRENGTH OR POWER?))
S40	205	S39 AND S6

03/25/2004

10/085, 607

S41 8 S40 AND S11  
S42 8 RD (unique items)  
S43 8 S42 NOT S18,S20,S21,S31  
S44 197 S40 NOT S43  
S45 35 S44 AND S5  
S46 35 S45 AND S8  
S47 0 S46 AND S9  
S48 7 S46 AND S12  
S49 7 RD (unique items)  
S50 7 S49 NOT S18,S20,S21,S31,S42  
S51 28 S46 NOT S50  
S52 10 S51 AND S13  
S53 10 RD (unique items)  
S54 10 S53 NOT S18,S20,S21,S31,S42,S49  
S55 18 S51 NOT S52  
S56 18 RD (unique items)  
S57 18 S56 NOT S18,S20,S21,S31,S42,S49,S53

18/3,AB/1 (Item 1 from file: 347)  
DIALOG(R)File 347:JAPIO  
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07392350

EMITTER AND LIGHT-EMITTING SYSTEM

PUB. NO.: 2002-260851 [JP 2002260851 A]

PUBLISHED: September 13, 2002 (20020913)

INVENTOR(s): HAYASHI KAZUHIKO

FUKUCHI TAKASHI

TSUBOI SHINZO

APPLICANT(s): NEC CORP

APPL. NO.: 2001-052741 [JP 200152741]

FILED: February 27, 2001 (20010227)

ABSTRACT

PROBLEM TO BE SOLVED: To provide an emitter in which unevenness of luminance and color balance drop can be sufficiently suppressed and which can detect with good sensitivity the strength of emission of the element as it can introduce effectively the light emitted from the light-emitting element to a luminous intensity sensor, and in which the light-emitting element and luminous intensity sensor do little affect each other adversely, and a light-emitting system applied with this emitter.

SOLUTION: The emitter comprises a light-emitting element and a light sensor for detecting the luminous intensity emitted from this light-emitting element, and the above light-emitting element comprises a lower electrode and an upper electrode that has a luminous material layer containing at least a luminous layer and translucency on the substrate in order, and one of the lower electrode and upper electrode is a negative electrode and the other is a positive electrode, and the above light sensor is formed on the above light-emitting element.

20/3,AB/1 (Item 1 from file: 144)

DIALOG(R)File 144:Pascal

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14792093 PASCAL No.: 00-0472174

Native oxidized AlAs current blocking layer for AlGaInP high  
brightness light emitting diodes

Light-emitting diodes : research, manufacturing, and  
applications IV : San Jose CA, 26-27 January 2000

WANG G; MA X; ZHANG Y; WANG S; LI Y; CHEN L

YAO H Walter, ed; FERGUSON Ian T, ed; SCHUBERT E Fred, ed

National Engineering Research Center for Optoelectronics Devices,  
Institute of Semiconductors, Chinese Academy of Sciences, China

International Society for Optical Engineering, Bellingham WA, United  
States

Light-emitting diodes, 4 (San Jose CA USA) 2000-01-26

Journal: SPIE proceedings series, 2000, 3938 154-157

Language: English

Native Oxide AlAs layer were employed to block the current injection from  
the top anode. The luminous intensity exceeded 75mcd of  
the LED chip with native oxide AlAs layer sandwiched 5 mu m AlGaAs  
current spreading layer under 20mA current injection. Electrical and  
optical properties the LED chip and plastically sealed lamp were  
measured. Aging of the LED chip and lamp were performed under 70  
Degree C and room temperature, Experiment results shown that there is no  
apparent effect of the native oxidized AlAs layer and the process on the  
reliability of the LED devices.

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23/3,AB/1 (Item 1 from file: 2)

DIALOG(R)File 2:INSPEC

(c) 2004 Institution of Electrical Engineers. All rts. reserv.

04319107 INSPEC Abstract Number: A9304-7865-014, B9302-4220-004

Title: Light emitting intelligent Langmuir-Blodgett films

Author(s): Kurosawa, S.; Sugai, K.; Miyata, S.

Author Affiliation: Dept. of Mater. Syst. Eng., Tokyo Univ., Japan

Conference Title: First European Conference on Smart Structures and Materials p.407

Editor(s): Culshaw, B.; Gardiner, P.T.; McDonach, A.

Publisher: IOP, Bristol, UK

Publication Date: 1992 Country of Publication: UK xvi+418 pp.

ISBN: 0 7503 0222 4

Conference Sponsor: Eur. Opt. Soc.; SPIE; Smart Structures Res. Inst.; IOP; Glasgow Dev. Agency; EEC; IEEE; IEE; OSA; IMechE; et al

Conference Date: 12-14 May 1992 Conference Location: Glasgow, UK

Language: English

Abstract: Summary form only given. If one could introduce noncentrosymmetry in molecular assemblies and fabricate a cavity with a mirror and a grating mirror at both edges of a device, the luminescent light will be amplified in the cavity to permitting laser light. A second harmonic light is then generated due to the noncentrosymmetric molecular assembly in the cavity. This newly designed laser emitting device can be classified as one of the intelligent materials because it manifests simultaneously three fundamental functions: as a sensor responding luminescent intensity, and an actuator for emitting shorter laser light. This hybridization of organic dyes with rare metal ions offers multifunctional new devices. The Langmuir-Blodgett technique is one of the most suitable methods to hybridize organic dyes with luminous ionic materials. The luminescent characteristics of europium LB films of behenamidobenzoate are discussed.

Subfile: A B

23/3,AB/2 (Item 2 from file: 2)

DIALOG(R)File 2:INSPEC

(c) 2004 Institution of Electrical Engineers. All rts. reserv.

04274765 INSPEC Abstract Number: B9212-7620-004

Title: A new optical pressure measurement system (OPMS)

Author(s): Vollan, A.; Alati, L.

Conference Title: ICIAF '91 Record. International Congress on Instrumentation in Aerospace Simulation Facilities (Cat. No.91CH3028-8) p.10-16

Publisher: IEEE, New York, NY, USA

Publication Date: 1991 Country of Publication: USA 464 pp.

U.S. Copyright Clearance Center Code: CH3028-8/91/0000-0010\$1.00

Conference Sponsor: IEEE

Conference Date: 27-31 Oct. 1991 Conference Location: Rockville, MD, USA

Language: English

Abstract: The OPMS allows the measurement of pressure distribution over the whole surface of a wind tunnel model without pressure orifices, tubing and wiring. The model is simply coated with luminescence intensity pressure sensor paint which is illuminated by a laser light source. Due to the oxygen quenching of the molecules in the active paint layer, the intensity of the emitted

light from the model **surface** differs according to the different pressures acting on the **surface**. The **emitted light** is then recorded by means of a sensitive charge-coupled-device (CCD) camera which transmits the detected information to a processing unit, allowing reconstruction of the pressure distribution.

Subfile: B

23/3,AB/3 (Item 1 from file: 34)  
DIALOG(R)File 34:SciSearch(R).Cited Ref.Sci  
(c) 2004 Inst for Sci Info. All rts. reserv.

07304442 Genuine Article#: 148DM Number of References: 37  
Title: Optical and electron paramagnetic resonance study of light-emitting Si<sup>+</sup> ion implanted silicon dioxide **layers** (ABSTRACT AVAILABLE)  
Author(s): Valakh MY (REPRINT) ; Yukhimchuk VA; Bratus VY; Konchits AA; Hemment PLF; Komoda T  
Corporate Source: NATL ACAD SCI UKRAINE,INST SEMICOND PHYS, PROSPECT NAUKY 45/UA-252028 KIEV//UKRAINE/ (REPRINT); UNIV SURREY,SCH ELECT ENGN /INFORMAT TECHNOL & MATH/GUILDFORD GU2 5XH/SURREY/ENGLAND/; MATSUSHITA ELECT WORKS LTD,CENT RES LAB/KADOMA/OSAKA 571/JAPAN/  
Journal: JOURNAL OF APPLIED PHYSICS, 1999, V85, N1 (JAN 1), P168-173  
ISSN: 0021-8979 Publication date: 19990101  
Publisher: AMER INST PHYSICS, CIRCULATION FULFILLMENT DIV, 500 SUNNYSIDE BLVD, WOODBURY, NY 11797-2999  
Language: English Document Type: ARTICLE  
Abstract: Thermally grown SiO<sub>2</sub> on Si **substrates** implanted with Si<sup>+</sup> ions with a dose of 6 x 10<sup>16</sup> cm<sup>-2</sup> were studied by the techniques of photoluminescence, electron paramagnetic resonance (EPR), and low-frequency Raman scattering. Distinct oxygen-vacancy associated defects in SiO<sub>2</sub> and nonbridging oxygen hole centers were identified by EPR. The luminescence intensity in the 620 nm range was found to correlate with the number of these defects. The low-frequency Raman scattering technique was used to estimate the average size of the Si nanocrystallites formed after the implantation and thermal annealing at T > 1100 degrees C, which are responsible for the photoluminescence band with a maximum at 740 nm. The intensity of this band can be significantly enhanced by an additional treatment in a low-temperature rf plasma. (C) 1999 American Institute of Physics.  
[S0021-8979(99)09801-1].

23/3,AB/4 (Item 1 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
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014304535  
WPI Acc No: 2002-125238/200217  
XRAM Acc No: C02-038518  
XRPX Acc No: N02-093866  
Luminescent element for display devices such as personal computers, comprises substance containing guest and host material, produces emission spectrum at preset wavelength, when irradiated with electricity  
Patent Assignee: TORAY IND INC (TORA )  
Number of Countries: 001 Number of Patents: 001  
Patent Family:  
Patent No Kind Date Applicat No Kind Date Week  
JP 2001118683 A 20010427 JP 2000223449 A 20000725 200217 B

Priority Applications (No Type Date): JP 99228353 A 19990812

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
JP 2001118683 A		7	H05B-033/14	

Abstract (Basic): JP 2001118683 A

Abstract (Basic):

NOVELTY - The **luminescent** element comprises a substance containing a guest material and a host material, placed between a positive and a negative electrode. plates. The host material in the **element emits light** when irradiated with electrical energy, and produces peak emission spectrum at 300-460 nm.

USE - For display devices such as personal computers, monitors and televisions, and also in flat **panel** display, back-light, illumination, interior, labeling, sign board, electrophotography and signal generators

ADVANTAGE - The **luminescent** element excels in color purity and produce **luminescence** with high **intensity**. The element emits blue **luminescence** at 300-460 nm.

pp; 7 DwgNo 0/0

23/3,AB/5 (Item 2 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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013629888

WPI Acc No: 2001-114096/200113

XRPX Acc No: N01-083833

Strobe device for an image capturing apparatus, camera and lens fitted film unit and strobe **light** reflector has a **light** emitting tube to **emit** strobe **light** and an optical panel transmitting the light

Patent Assignee: KONICA CORP (KONS )

Inventor: HOSAKA T; ISHIDA K; MASUDA T; MORI N

Number of Countries: 027 Number of Patents: 006

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
EP 1067427	A2	20010110	EP 2000305629	A	20000704	200113	B
JP 2001051327	A	20010223	JP 99228576	A	19990812	200115	
JP 2001021960	A	20010126	JP 99190776	A	19990705	200121	
JP 2001117144	A	20010427	JP 99322531	A	19991112	200130	
JP 2001117151	A	20010427	JP 99358974	A	19991217	200130	
US 6480679	B1	20021112	US 2000610453	A	20000705	200278	

Priority Applications (No Type Date): JP 99358974 A 19991217; JP 99190776 A 19990705; JP 99228576 A 19990812; JP 99228577 A 19990812; JP 99228578 A 19990812; JP 99322531 A 19991112

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
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EP 1067427	A2	E	51 G03B-015/05	
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Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU MC MK NL PT RO SE SI

JP 2001051327 A		5 G03B-015/05
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JP 2001021960 A		8 G03B-015/05
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JP 2001117144 A		6 G03B-015/05
-----------------	--	---------------

JP 2001117151 A		7 G03B-015/05
-----------------	--	---------------

US 6480679	B1		G03B-015/03
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Abstract (Basic): EP 1067427 A2

Abstract (Basic):

NOVELTY - Strobe device reflects strobe light, light emitting tube (11) emits the strobe light and an optical panel to transmit the light. The strobe light has a maximum luminous intensity arranged (21-25) in a direction different from a direction of a strobe light axis. The device has a side reflection surface with a sub-reflection surface orthogonal to a longitudinal direction of the light emitting device.

DETAILED DESCRIPTION - Independent claims describe an image capturing device and a reflector employed for a strobe device.

USE - As a strobe device for an image capturing apparatus, camera and lens fitted film unit and strobe light reflector.

ADVANTAGE - Could brightly illuminate a periphery of the subject and specifically make it possible to obtain desirable distribution characteristics of the luminous intensity even when image capturing is conducted with a wide angle photographic lens.

DESCRIPTION OF DRAWING(S) - The drawing shows an arrangement of several photo-sensors for measuring an amount of strobe light emitted from the strobe device.

the light emitting part of the strobe device (11)

the photo sensors for obtaining the luminous intensity (21 to 25)

pp; 51 DwgNo 2/34

23/3,AB/6 (Item 3 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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012249454

WPI Acc No: 1999-055561/199905

XRPX Acc No: N99-042087

Traffic information display board installed outdoors - has light guide path to receive external light at one end and other end provided with measuring element to measure intensity of received light based on which light emitting element is controlled

Patent Assignee: NIPPON SIGNAL CO LTD (NIUG )

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
JP 10307553	A	19981117	JP 97118149	A	19970508	199905 B

Priority Applications (No Type Date): JP 97118149 A 19970508

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
JP 10307553	A	3	G09F-013/04	

Abstract (Basic): JP 10307553 A

The display board has a light guide path (5) whose one end is open to receive external light. A measurement element (7) provided at the other end of the light guide path is used for measuring the luminosity of the outside light. Based on the value of luminosity, the intensity of light from a light emitting element is adjusted.

ADVANTAGE - Enables tapping external light resources.

Dwg.1/2

23/3,AB/7 (Item 1 from file: 347)  
DIALOG(R)File 347:JAPIO  
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06467413

COLOR LIGHT SYSTEM SIGNAL FOR RAILWAY, AND LIGHTING EQUIPMENT AND CONTROL DEVICE THEREFOR

PUB. NO.: 2000-052988 [JP 2000052988 A]  
PUBLISHED: February 22, 2000 (20000222)  
INVENTOR(s): SUZUKI ISAMU  
SUMIYAMA YOSHIHIRO  
HIROMITSU TSUTOMU  
APPLICANT(s): DAIDO SIGNAL CO LTD  
APPL. NO.: 10-231501 [JP 98231501]  
FILED: August 18, 1998 (19980818)

ABSTRACT

PROBLEM TO BE SOLVED: To provide a signal system capable of automatically measuring light emission intensity.

SOLUTION: A lighting equipment 9 for a color light system signal for railway is provided with a light source with a large number of light emitting elements 96 provided uniformly in the light emitting direction, a light translucent cover 94 surrounding this light source from the light emitting direction side, and a light guide member 100 provided on the light source side and having a light entering part facing the cover 94. The light guide member 100 is extended outside the equipment by a quartz fiber 105 through an optical connector 103 provided in the equipment. In the cover 94 fitted with a reflecting film 200, the reflectance of the inner surface is partially strengthened, so that reflected light can be received by the light guide member 100, and moreover visibility and productivity are not impaired. The detection value photoelectrically transferred outside the lighting equipment 9 has little noise and is subjected to degradation detection and luminous intensity adjustment by a control device.

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23/3,AB/8 (Item 2 from file: 347)  
DIALOG(R)File 347:JAPIO  
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06187975

FLUORESCENT PRINTER

PUB. NO.: 11-129525 [JP 11129525 A]  
PUBLISHED: May 18, 1999 (19990518)  
INVENTOR(s): NAKAMURA SHIGETAKA  
MORISHIMA HIROMICHI  
APPLICANT(s): NORITSU KOKI CO LTD  
APPL. NO.: 09-300407 [JP 97300407]  
FILED: October 31, 1997 (19971031)

ABSTRACT

PROBLEM TO BE SOLVED: To prevent an emission intensity of a luminous body from being influenced by various thermal conditions to the luminous body by controlling an output from a print head for

exposing by means of a temperature compensating mechanism in accordance with real time information in terms of a temperature of the luminous body detected by a temperature detecting means.

SOLUTION: When a film 2 is supplied to an optical exposure device 20 by a roller 11 driven by a motor 12, a controller 7 controls a dimmer filter 22 based on image information of the film 2 read by a scanner 10. As a result, an emission light of a light source 21 is tuned to be in a color balance corresponding to a color density of the image of the film 2. The optical exposure device 20 emits the tuned light to the film 2 and to a photographic paper 3 positioned on an exposure point 1 by making a permeation light based on the image information of the film 2, thereby forming the image on the film to the photographic paper 3. The photographic paper 3 having the formed image is conveyed to a developing operation section 5 by means of a paper conveying mechanism 6.

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23/3,AB/9 (Item 3 from file: 347)  
DIALOG(R)File 347:JAPIO  
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05471184  
IMAGE FORMING DEVICE AND IMAGE FORMATION

PUB. NO.: 09-085984 [JP 9085984 A]  
PUBLISHED: March 31, 1997 (19970331)  
INVENTOR(s): NAKANO MASAO  
APPLICANT(s): CANON INC [000100] (A Japanese Company or Corporation), JP  
(Japan)  
APPL. NO.: 07-244917 [JP 95244917]  
FILED: September 22, 1995 (19950922)

#### ABSTRACT

PROBLEM TO BE SOLVED: To improve the quality of an image by eliminating the adverse effect of an unevenness in the luminous intensity of a light emitting element, in a device for forming an image using plural light emitting elements.

SOLUTION: An image processing device 30 loads in the memory the multivalued data di of an image signal 40 from an external source, then reads a weight factor based on the data relative to the previously measured luminescent intensity of each of LEDs of an LED array, and multiplies the multivalued data di by the weight factor of each of the corresponding LEDs to perform the binary processing of data relative to the calculation result by an error dispersion method. Further, the two-valued signal obtained by this binary processing is connected to an LED driver 20, and the light emitted by each of the LEDs of the LED array is switched ON/OFF to form a latent image on a latent image carrier moving in an orthogonal direction with the LED array 10. In addition, the latent image is developed by a publicly known electrophotographic recording method, and then is transferred to a recording paper. Finally, the paper is thermally fixed and discharged.

23/3,AB/10 (Item 4 from file: 347)  
DIALOG(R)File 347:JAPIO  
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05186906

METHOD AND APPARATUS FOR CORRECTING WIDTH OF LUMINOUS INTENSITY  
OF LED PRINTING HEAD

PUB. NO.: 08-142406 [JP 8142406 A]

PUBLISHED: June 04, 1996 (19960604)

INVENTOR(s): NAKAJIMA NORIO

TSUKAGOSHI HISASHI

KAMIMURA KATSUYA

AIKO SADAHISA

APPLICANT(s): OKI ELECTRIC IND CO LTD [000029] (A Japanese Company or  
Corporation), JP (Japan)

APPL. NO.: 07-242766 [JP 95242766]

FILED: September 21, 1995 (19950921)

ABSTRACT

PURPOSE: To eliminate printing density irregularity by measuring the luminous intensity distribution of LED elements and slicing the same by reference luminous intensity to calculate the width of luminous intensity and setting the correction values of the drive energies of respective light emitting elements so as to make the calculated value constant.

CONSTITUTION: An LED printing head 1 is equipped with a substrate 5 having an LED chip 2 wherein a large number of the LED elements of light emitting elements are gathered, the drive circuits 3 driving the respective LED elements and a non-volatile memory means 4 storing the correction values of drive energies. Further, the LED printing head 1 is equipped with the frame 6 supporting the substrate 5, a lens 7 and a housing 8. In this case, the luminous intensity distribution of the LED printing head 1 is measured and the measured luminous intensity distribution is sliced by reference luminous intensity. The correction values of the drive energies of the respective light emitting elements are set so that the width of the luminous intensity at every reference luminous intensity becomes constant and stored in the memory means 4.

23/3, AB/11 (Item 5 from file: 347)

DIALOG(R)File 347:JAPIO

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04042411

END PART DETECTING APPARATUS

PUB. NO.: 05-034111 [JP 5034111 A]

PUBLISHED: February 09, 1993 (19930209)

INVENTOR(s): SHIBUKAWA KIYOSHI

KOBAYASHI KOJI

APPLICANT(s): NIRECO CORP [327418] (A Japanese Company or Corporation), JP  
(Japan)

APPL. NO.: 03-212914 [JP 91212914]

FILED: July 30, 1991 (19910730)

JOURNAL: Section: P, Section No. 1557, Vol. 17, No. 314, Pg. 56, June  
15, 1993 (19930615)

ABSTRACT

PURPOSE: To decrease the change in luminance of a light emitting part and to make the effect of disturbance light difficult to receive.

CONSTITUTION: An object to be measures 3 is inserted between a light projecting part 1 and a light receiving part 2, and the position of the end part is measured. At this time, light emitting diodes L<sub>1</sub>-L<sub>n</sub> which are connected to the light emitting part 1 in series are arranged. A luminous-intensity detecting light emitting diode SL, which is connected to the light emitting diodes in series, is arranged so as to face a photoelectric conversion element. The current of the light emitting diode is controlled so that the current of the photoelectric conversion element becomes the specified value with a luminous-intensity controlling part. The light is intermittently emitted from the light emitting diode. A visible-light cutting filter 5, which can pass only the wave length in the vicinity of near infrared rays, is provided at a light receiving surface.

23/3,AB/12 (Item 6 from file: 347)

DIALOG(R)File 347:JAPIO

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03427470

#### OPTICAL OUTPUT ADJUSTMENT OF LINE HEAD

PUB. NO.: 03-090370 [JP 3090370 A]

PUBLISHED: April 16, 1991 (19910416)

INVENTOR(s): ETO YOSHIRO

APPLICANT(s): TOKYO ELECTRIC CO LTD [000356] (A Japanese Company or Corporation), JP (Japan)

APPL. NO.: 01-228592 [JP 89228592]

FILED: September 04, 1989 (19890904)

JOURNAL: Section: M, Section No. 1133, Vol. 15, No. 267, Pg. 40, July 08, 1991 (19910708)

#### ABSTRACT

PURPOSE: To improve print quality by measuring the luminous intensity of each edge emitting type EL element and removing part of at least, the electrode layer of a specified edge emitting type EL element based on the measurement value.

CONSTITUTION: In an adjustment device 9, data detected from an edge emitting type EL element 2 is output to a control circuit 15, and a laser head 14 controlled by the control circuit 15 removes the electrode layer 6 of a specified edge emitting type EL element by a specified length. Then, the luminous intensity of the element 2 decreases to make the light output of a line head 8 uniform. The line head 8 adjusted in this way makes, for example, the toner quantity attracted by a photosensitive drum or the color development of photosensitive paper uniform. Thus these features of the line head 8 contribute to the manufacture of a line printer capable of high-quality print.

23/3,AB/13 (Item 7 from file: 347)

DIALOG(R)File 347:JAPIO

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03303384

LUMINOUS INTENSITY VARIABLE TESTING CIRCUIT FOR  
LIGHT EMITTING DIODE

PUB. NO.: 02-278884 [JP 2278884 A]  
PUBLISHED: November 15, 1990 (19901115)  
INVENTOR(s): TSUNASHIMA HIROSHI  
APPLICANT(s): FUJITSU LTD [000522] (A Japanese Company or Corporation), JP  
(Japan)  
APPL. NO.: 01-102134 [JP 89102134]  
FILED: April 20, 1989 (19890420)  
JOURNAL: Section: E, Section No. 1029, Vol. 15, No. 46, Pg. 90,  
February 04, 1991 (19910204)

ABSTRACT

PURPOSE: To simultaneously conduct tests of a **light emitting diode** and a driving circuit by applying a defect signal to the base of a driving semiconductor terminal element to control it at the time of defect occurrence, generating a test signal at the time of testing the diode, and applying it to the **base** of the terminal element to control it.

CONSTITUTION: A **light emitting diode** 1 is connected in series with a driving semiconductor 3 terminal element 2 for lighting it, one end of the circuit is connected to a DC voltage, and the other one end is connected to a ground. Defect signal output means 3 for applying a signal corresponding to the defect to the **base** of the element 2 when a defect occurs, to light the diode 1 to **emit a light**, and test signal generating means 4 for generating a test signal by turning ON, OFF a switch 5 applied at one end with a DC voltage, applying the test signal to the **base** of the **element** 2 to **emit a light** with the diode 1 set in a quasi-lighting state are provided. The element 2 is controlled so that the diode 1 can display both **light emitting states** of a **lighting** state and a **quasi-lighting** state. Thus, when the diode is tested, the tests of the diode and the driving circuit can be concurrently performed.

23/3, AB/14 (Item 8 from file: 347)  
DIALOG(R) File 347: JAPIO  
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02947072

MANUFACTURE OF LIGHT EMITTING DIODE ARRAY ELEMENT

PUB. NO.: 01-244672 [JP 1244672 A]  
PUBLISHED: September 29, 1989 (19890929)  
INVENTOR(s): KIYOHASHI KAZUO  
APPLICANT(s): NEC CORP [000423] (A Japanese Company or Corporation), JP  
(Japan)  
APPL. NO.: 63-072286 [JP 8872286]  
FILED: March 25, 1988 (19880325)  
JOURNAL: Section: E, Section No. 865, Vol. 13, No. 581, Pg. 126,  
December 21, 1989 (19891221)

ABSTRACT

PURPOSE: To eliminate the luminous irregularity of elements, and improve the yield, by **measuring luminous intensity** distribution in a semiconductor crystal plate, making the arrangement

direction of a light emitting diode array element coincide with the direction wherein the inclination of luminous intensity distribution is small, and patterning the element in this state.

CONSTITUTION: Photo luminescence intensity in the surface of a GaAs<sub>0.61</sub>P<sub>0.39</sub> crystal substrate is measured at every 5mm intervals by using a helium neon gas laser. After the intensity distribution measurement, patterning of a light emitting diode array element having 64 light emitting diodes 7<sub>01</sub>, 7<sub>02</sub>, ..., 7<sub>64</sub> in a pellet is performed. At this time, the cleavage direction near the direction whose photo luminescence intensity distribution inclination is small is selected out of two cleavage direction of the GaAs<sub>0.61</sub>P<sub>0.39</sub> crystal substrate whose photo luminescence intensity distribution measurement is finished. The element is subjected to patterning, by making the above cleavage direction coincide with the arrangement direction of the light emitting diode array element. A selective diffusion window is formed by using a nitride film, a P-N junction is formed by zinc diffusion, and ohmic electrodes are formed by using aluminum for the P-side and using gold system alloy for the N-side.

23/3, AB/15 (Item 9 from file: 347)  
DIALOG(R) File 347: JAPIO  
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02851342

RETARDATION MEASURING APPARATUS ..

PUB. NO.: 01-148942 [JP 1148942 A]  
PUBLISHED: June 12, 1989 (19890612)  
INVENTOR(s): YOSHII MASAKI  
EBINUMA NAOTAKE  
KANEDA AIZO  
APPLICANT(s): HITACHI LTD [000510] (A Japanese Company or Corporation), JP (Japan)  
APPL. NO.: 62-307512 [JP 87307512]  
FILED: December 07, 1987 (19871207)  
JOURNAL: Section: P, Section No. 930, Vol. 13, No. 406, Pg. 163,  
September 08, 1989 (19890908)

#### ABSTRACT

PURPOSE: To measure the retardation of an object to be measured having a light impervious film provided to the single surface thereof, by providing a polarizer and a 1/4 wavelength plate to a reciprocating optical system formed by the reflection of the light emitting from a measuring light source by the film formed to the object to be measured.

CONSTITUTION: The beam 16 emitted from laser 2 reciprocates in an object 5 to be measured by a polarizer 3, a 1/4 wavelength plate 4 and the reflecting film 5b on the object 5 to be measured to return to a light detector 8 through the wavelength plate 4 and the polarizer 3. The intensity of the returned light 16' is inputted to a CPU 17 through an A/D converter 10'. In the measurement of luminous intensity, the wavelength plate 4 is rotationally adjusted by a pulse motor 9 controlled by the CPU 17 so that the intensity of the return beam 16' becomes max. The beam intensity at that time is stored and the rotary

position of the wavelength plate 4 is stored and, further, the wavelength plate is rotated by 45 deg. and the intensity of the return beam at that time is stored. By this operation, the retardation of the reciprocating path of the object 5 to be measured can be calculated.

23/3, AB/16 (Item 10 from file: 347)  
DIALOG(R)File 347:JAPIO  
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02521887

**LINEAR LIGHT-EMITTING ELEMENT**

PUB. NO.: 63-138787 [JP 63138787 A]  
PUBLISHED: June 10, 1988 (19880610)  
INVENTOR(s): NISHIURA SHINJI  
              UENO MASAKAZU  
APPLICANT(s): FUJI ELECTRIC CO LTD [000523] (A Japanese Company or  
              Corporation), JP (Japan)  
APPL. NO.: 61-286451 [JP 86286451]  
FILED: December 01, 1986 (19861201)  
JOURNAL: Section: E, Section No. 672, Vol. 12, No. 397, Pg. 70,  
              October 21, 1988 (19881021)

**ABSTRACT**

PURPOSE: To reduce the title element in size and moreover, to obtain a uniform luminous intensity by a method wherein a thin film semiconductor layer to emit light on energization is provided between a plurality of individual electrodes and a common electrode opposed to the individual electrodes and a common terminal part is provided through connecting parts, to which a conductive layer to form each individual electrode is extended to adjust a sectional area.

CONSTITUTION: Individual electrode parts 21 consisting of a transparent conductive film, connecting parts 22 protruding from the individual electrode parts and a common terminal part 23 being coupled with each connecting part are provided on a transparent insulative substrate 1 and a semiconductor layer 3 is mask-formed into a pattern. Then, the pattern of a metal electrode 4 is mask-formed from Al, titanium, chrome and so on by a deposition method and is used as a common electrode. Then, a voltage is applied between the common terminal part 23 and the common electrode 4, the semiconductor layer 3 is made to emit and the connecting parts 22 being connected to the individual electrodes 21 are trimmed with laser light in such a way that the measured value of the luminous intensity in the center of the part equivalent to each individual electrode 21 becomes constant. Thereby, a linear light-emitting element having a good uniformity can be easily obtained.

25/3,AB/1 (Item 1 from file: 2)

DIALOG(R)File 2:INSPEC

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00272124 INSPEC Abstract Number: B71021529

Title: Phase-shifting bridge having photocells and  
electroluminescence elements

Inventor(s): Kohashi, T.

Assignee(s): Matsushita Electric Industrial Co. Ltd

Patent Number: US 3571601 Issue Date: 710323

Application Date: 681008

Priority Appl. Number: JP 42/66764 Priority Appl. Date: 671013

Country of Publication: USA

Language: English

Abstract: An energy-sensitive luminescent device having means including an energy-sensitive element whose impedance is variable depending on an energy signal applied thereto so that a variation in the impedance thereof can be utilized for shifting the phase of an AC voltage applied from an AC voltage supply to an electrically luminescent element, and means for detecting the variation in the phase of the waveform of the luminous output from the electrically luminescent element as a variation in the luminous intensity.

Subfile: B

25/3,AB/2 (Item 1 from file: 144)

DIALOG(R)File 144:Pascal

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15776330 PASCAL No.: 02-0489842

Intercalation of 8-hydroxyquinoline into Al-smectites by solid-solid reactions

KHAORAPONG Nithima; KURODA Kazuyuki; OGAWA Makoto

Department of Applied Chemistry, Waseda University, Okubo-3, Shinjuku-ku, Tokyo 169-8555, Japan; Kagami Memorial Laboratory for Materials Science and Technology, Waseda University, Nishiwaseda-2, Shinjuku-ku, Tokyo 169-0051, Japan; Department of Earth Sciences, Waseda University, Nishiwaseda-1, Shinjuku-ku, Tokyo 169-8050, Japan; PRESTO, Japan Science and Technology Corporation, Japan

Journal: Clays and clay minerals, 2002, 50 (4) 428-434

Language: English

Tris(8-hydroxyquinoline)aluminum(III) complexes (Alq SUB 3 ), one of the molecules studied most widely for organic light-emitting devices, were formed in the interlayer spaces of smectites by solid-solid reactions between Al-smectites (Al-montmorillonite and Al-synthetic saponite (Sumecton)) and 8-hydroxyquinoline (8HQ) at room temperature. The intercalation of 8-hydroxyquinoline molecules into Al-smectites was demonstrated by powder XRD, FTIR, DTA, TG, TG-MS, and chemical analysis. The coordination of the ligand to the interlayer Al cations was proved by FTIR, UV-Vis, and photoluminescence spectroscopies. The luminescence intensity of Alq SUB 3 -Sumecton was much greater than that of Alq SUB 3 -montmorillonite, and this was ascribed to the very small amount of quenching impurities in Sumecton.

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25/3,AB/3 (Item 2 from file: 144)

DIALOG(R)File 144:Pascal

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15717785 PASCAL No.: 02-0427459

An optical sensing material for trace analysis of oxygen.

Metalloporphyrin dispersed in poly(1-trimethylsilyl-1-propyne) film

AMAO Yutaka; OKURA Ichiro; SHINOHARA Hiromi; NISHIDE Hiroyuki

Department of Applied Chemistry, Oita University, Dannoharu, Oita 870-119  
, Japan; Department of Bioengineering, Tokyo Institute of Technology,  
Nagatsuta, Midori-ku, Yokohama 226-8501, Japan; Department of Polymer  
Chemistry, Waseda University, Okubo, Shinjuku, Tokyo 169-8555, Japan

Journal: Polymer journal, 2002, 34 (6) 411-417

Language: English

A highly gas permeable polymer, poly(1-trimethylsilyl-1-propyne) (poly(TMSP)), was applied as a matrix of the optical oxygen sensor using the oxygen-induced luminescence quenching of octaethylporphyrin (OEP) platinum (PtOEP) or palladium complex (PdOEP). OEP complex was homogeneously dispersed in poly(TMSP) to give a mechanical tough film with thickness of 10  $\mu$ m. The luminescence intensity of OEP complex dispersed in the poly(TMSP) films drastically decreased with an increase in oxygen concentration. The oxygen sensitivity of the film ( $I_0 / I$ ) was very high and estimated to be 225 for PtOEP and 121 for PdOEP, respectively. The Stern-Volmer constants of PtOEP and PdOEP dispersed in poly(TMSP) films are estimated to be 6.6 and 17%  $^{-1}$ , respectively. These results indicate that OEP metal complex dispersed in the poly(TMSP) films are novel optical sensing material for trace analysis of oxygen.

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25/3,AB/4 (Item 3 from file: 144)

DIALOG(R)File 144:Pascal

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11676957 PASCAL No.: 94-0536243

Novel metal-organic ruthenium(II) diimin complexes for use as longwave excitable luminescent oxygen probes

KLIMANT I; BELSER P; WOLFBEIS O S

Karl-Franzens univ., inst. organic chemistry, analytical div., 8010 Graz,  
Austria

Journal: Talanta : (Oxford), 1994, 41 (6) 985-991

Language: English

New ruthenium(II) diimin complexes are presented which are useful as luminescent oxygen probes. Because their luminescence excitation maxima are between 535 and 570 nm, they can be photo-excited by green LEDs which are much brighter than the blue LEDs used so far for existing Ru diimines. The spectral and photophysical properties as well as the solubility properties of the new probes are investigated and discussed in terms of quenching, photostability, and lifetimes. The probes were incorporated into organic polymers by three different methods, to obtain oxygen-sensitive materials for use in optical oxygen sensing. The membranes were characterized with respect to oxygen sensitivity, luminescence intensity, response times, and stability

25/3,AB/5 (Item 1 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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014985657

WPI Acc No: 2004-174059/200417

XRPX Acc No: N04-138588

Light emitting diode arrangement method for display,  
involves arranging light emitting diode with same  
luminous intensity in sequential order, using measured  
luminous intensity of diodes

Patent Assignee: TOYODA GOSEI KK (TOZA )

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
JP 2004047620	A	20040212	JP 2002201358	A	20020710	200417 B

Priority Applications (No Type Date): JP 2002201358 A 20020710

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
JP 2004047620	A	12	H01L-033/00	

Abstract (Basic): JP 2004047620 A

Abstract (Basic):

NOVELTY - A luminous intensity of each light emitting diode (LED) is measured and stored. The light emitting diodes with same luminous intensity is arranged in sequential order, using the stored luminous intensity.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

- (1) light emitting element arrangement method;
- (2) light emitting diode arranging apparatus; and

- (3) light emitting element arranging apparatus.

USE - For arranging light emitting diodes used for display.

ADVANTAGE - Uniform light dispersion of light emitting diode or light emitting element is obtained.

DESCRIPTION OF DRAWING(S) - The figure shows the block diagram of light emitting diode arrangement apparatus. (Drawing includes non-English language text).

pallet (25)  
data (26)  
computer (27)  
robot (28)  
taping (30)  
pp; 12 DwgNo 3/5

25/3,AB/6 (Item 2 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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008044529

WPI Acc No: 1989-309641/198942

XRAM Acc No: C89-137094

XRPX Acc No: N89-235922

New light emitting probe complex for measuring pH - enables microscopic pH to be measured and comprises poly-pyridine ligand and transition metal ion

Patent Assignee: KENKYUSHO R (KENK-I); TERUMO CORP (TERU ); RIKAGAKU KENKYUSHO (RIKA )

Inventor: ASAKURA T; KANEKO M; NAKAMURA H; SHIMOMURA T; SUGISE H

Number of Countries: 010 Number of Patents: 006

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 8909400	A	19891005	WO 89JP314	A	19890324	198942 B
JP 1244362	A	19890928	JP 8871630	A	19880325	198945
AU 8932974	A	19891016				199008
EP 408748	A	19910123	EP 89903803	A	19890324	199104
US 5118405	A	19920602	WO 89JP314	A	19890324	199225
			US 90582176	A	19900925	
EP 408748	A4	19910131	EP 89903803	A	19890000	199515

Priority Applications (No Type Date): JP 8871630 A 19880325

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
WO 8909400	A	J	16	

Designated States (National): AU US

Designated States (Regional): BE DE FR GB IT NL SE

EP 408748 A

Designated States (Regional): BE DE FR GB IT NL SE

US 5118405 A 7 G01N-027/26 Based on patent WO 8909400

Abstract (Basic): WO 8909400 A

Light emitting complex for pH measurement which comprises a polypyridine ligand (1) and a transition metal ion (2). (1) has an ionisable ring carbon substit. e.g. CO<sub>2</sub>H, SO<sub>3</sub>H, OH, NH<sub>4</sub> or a pyridinium gp. and is 4,4'-dihydroxy- or 4,4'-disulphonic acid-2,2'-bipyridine, etc. (2) is an ion of a gp. VIII element e.g. indium, ruthenium, osmium, iron, rhodium. Examples of the complex are tris(4,4'-dicarboxy-2,2'-bipyridine) tris(4,4'-disulphonic acid-2,2'-bipyridine)- or tris(bathophen anthroline-disulphonic acid)-ruthenium (II) complex etc. A polymer film contg. the probe complex furnishes a light emitting probe film for measuring pH. By attaching the probe film to the extremity of an optical fibre another pH measurement instrument is obtd. In the method of measuring pH the strength of the light emitted from the probe complex is measured.

USE/ADVANTAGE - The complex enables microscopic measurement of pH.

1/1

Abstract (Equivalent): US 5118405 A

A pH is measured by detecting the luminescence intensity of the excited state of a luminescent probe complex in a test soln using a device consisting of (A) a luminescent probe complex comprising a polypyridine ligand having an ion dissociable substituent on a carbon ring and a gp. 8 transition metal and (B) a macromolecular membrane containing (A) and immobilised at the tip of an optical fibre.

The device is pref. irradiated with light having a wavelength (near) lambda max and luminescence intensity of the probe complex is measured.

ADVANTAGE - The pH at a local site can be readily measured

25/3,AB/7 (Item 1 from file: 347)

DIALOG(R)File 347:JAPIO

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07023622

OPTICAL TRANSMITTER AND OPTICAL TRANSMISSION SYSTEM

PUB. NO.: 2001-251254 [JP 2001251254 A]

PUBLISHED: September 14, 2001 (20010914)

INVENTOR(s): YAMAKI KAZUYOSHI

SERIZAWA HIDEYUKI  
APPLICANT(s): OPNEXT JAPAN INC  
APPL. NO.: 2000-067151 [JP 200067151]  
FILED: March 07, 2000 (20000307)

ABSTRACT

PROBLEM TO BE SOLVED: To provide an optical transmitter the modulated optical output of which is made constant, even when an  $\alpha$ ; parameter is set in matching with an optical transmission system, in order to apply the optical transmitter to an optional system and in order to compensate an optical element characteristic against time aging deterioration and to provide a highly reliable optical transmission system using the transmitter.

SOLUTION: Since a light emitting element backward output luminous intensity detected by a PD 6 depends on a light emitting element drive current and an electric field absorption amount of an EA optical modulator 4 detected by an electric field absorption amount monitor 25 depends on the output light of a light emitting element 5 and an EA optical modulation drive point of a drive section 8, taking the difference between both a value of the PD 6 and a value of the electric field absorption amount monitor 25 can detect only the fluctuating components of the EA optical modulator drive point. Then a modulated light output 7 can be compensated automatically, even if the EA optical modulator drive point is changed due to control of the  $\alpha$ ; parameter and fluctuations in the secular deterioration of the light emitting element, by applying a current corresponding to the fluctuation of the EA optical modulator drive point to a drive current source 10.

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25/3,AB/8 (Item 2 from file: 347)  
DIALOG(R)File 347:JAPIO  
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06126592  
TIME-SHARING BIDIRECTIONAL OPTICAL COMMUNICATION MODULE AND TRANSMITTING AND RECEIVING UNIT

PUB. NO.: 11-068129 [JP 11068129 A]  
PUBLISHED: March 09, 1999 (19990309)  
INVENTOR(s): ICHIHARA ATSUSHI  
APPLICANT(s): ROHM CO LTD  
APPL. NO.: 09-229392 [JP 97229392]  
FILED: August 26, 1997 (19970826)

ABSTRACT

PROBLEM TO BE SOLVED: To provide a time-sharing bidirectional optical communication module at low cost by using a light-receiving element common to a receiving unit and a monitor, and conventional receiving and transmitting ICs without modifications.

SOLUTION: A module 10 includes a light-emitting element 1 for generating a transmitting light signal, a collecting lens 4 for coupling the transmission light signal T of the light-emitting element 1 with a optical waveguide 5, a light-receiving element for receiving a receiving light signal R from the optical waveguide 5, and a monitoring light-receiving element for

monitoring the luminescent intensity of the light-emitting element 1. The light-receiving element and the monitoring element include a common light-receiving element 2. A transistor 7 and a first resistor R1 for changing a voltage are connected to the light-receiving element 2 at a position, to which a receiving IC 8 via a second resistor R2 and a transmitting IC via a third resistor are connected. Then, a time-sharing bidirectional light communication transmitting and receiving unit can be obtained.

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25/3,AB/9 (Item 3 from file: 347)  
DIALOG(R)File 347:JAPIO  
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05387796

#### DISPLAY APPARATUS

PUB. NO.: 09-002596 [JP 9002596 A]  
PUBLISHED: January 07, 1997 (19970107)  
INVENTOR(s): YOSHIDA TAKEOMI  
APPLICANT(s): TOKICO LTD [000305] (A Japanese Company or Corporation), JP (Japan)  
APPL. NO.: 07-151921 [JP 95151921]  
FILED: June 19, 1995 (19950619)

#### ABSTRACT

PURPOSE: To provide a display apparatus constituted so as to adjust the angle of an oil supply quantity display device and the quantity of emission in order to make the display of the quantity of oil supplied easy to see from a driver's seat of a vehicle receiving the supply of oil.

CONSTITUTION: In a suspension type oiling device, an oil supply nozzle 6 is allowed to fall from the delivery unit 4 of the high place 3 of an oil station 3 to supply oil. The quantity of the oil supplied to a vehicle 17 is displayed on the oil supply quantity display device 19a of the display apparatus 19 provided to the high place. A light emitting element emitting light in the stop direction of the vehicle 17, a photodetector detecting the light reflected from the front glass 17a of the vehicle 17 and a luminous intensity sensor detecting the brightness of the periphery are provided to the oil supply quantity display device 19a. A display device position program 18A revolving the display device 19a toward the front glass 17a of the vehicle 17 and a display emission quantity control program 18B adjusting the emission quantity of the display device 19a corresponding to the brightness of the periphery are inputted to a control device 18.

25/3,AB/10 (Item 4 from file: 347)  
DIALOG(R)File 347:JAPIO  
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04244031

#### PHOTO DETECTOR

PUB. NO.: 05-235731 [JP 5235731 A]  
PUBLISHED: September 10, 1993 (19930910)  
INVENTOR(s): NISHI TSUTOMU  
APPLICANT(s): SANYO ELECTRIC CO LTD [000188] (A Japanese Company or

APPL. NO.: Corporation), JP (Japan)  
04-035278 [JP 9235278]  
FILED: February 21, 1992 (19920221)  
JOURNAL: Section: E, Section No. 1479, Vol. 17, No. 691, Pg. 86,  
December 17, 1993 (19931217)

ABSTRACT

PURPOSE: To provide the photo detector easily varying a luminous quantity when it is required to intensify the luminous quantity of a light emitting element.

CONSTITUTION: When a light emitting diode<sup>5</sup> does not have a luminous quantity on request, a variable resistor 11 is adjusted to increase a gain of an amplifier 10 and to allow the detector to cope with load control, and even when the variable resistor 11 is adjusted up to a reference voltage VCC(sub 2)/2 of a comparator 14 and a desired output of the amplifier 10 is not obtained, a drive circuit supplying a current to the light emitting diode 5 is controlled by a detection signal obtained from the comparator 14 to easily increase the luminous quantity of the light emitting diode 5.

25/3, AB/11 (Item 5 from file: 347)  
DIALOG(R) File 347: JAPIO  
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03490233  
ELECTROOPTICAL CONVERSION CONNECTOR

PUB. NO.: 03-153133 [JP 3153133 A]  
PUBLISHED: July 01, 1991 (19910701)  
INVENTOR(s): OKUBO HIROSHI  
ISHII TAKUO  
APPLICANT(s): FUJITSU LTD [000522] (A Japanese Company or Corporation), JP  
(Japan)  
FUJI FACOM CORP [470926] (A Japanese Company or Corporation),  
JP (Japan)  
APPL. NO.: 01-291185 [JP 89291185]  
FILED: November 10, 1989 (19891110)  
JOURNAL: Section: E, Section No. 1116, Vol. 15, No. 383, Pg. 86,  
September 27, 1991 (19910927)

ABSTRACT

PURPOSE: To detect luminous intensity before communication is disabled by providing a luminous intensity revision section revising the luminous intensity of a light emitting element by an instruction and decreasing the luminous intensity more than the normal luminous intensity.

CONSTITUTION: When the deterioration in an optical fiber cable 3 is detected, an instruction is given to a luminous intensity revision section 4 and the light emitting element 1 is driven by a driving circuit 2 while the luminous intensity is decreased to a lower level than a prescribed level. When the optical fiber cable 3 is deteriorated and the luminous intensity is decreased by the luminous intensity revision section 4 to a proper level, since normal transmission is not implemented, the deterioration state of the cable 3 is detected.

25/3,AB/12 (Item 6 from file: 347)

DIALOG(R)File 347:JAPIO

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03325316

COORDINATE INSTRUCTION DEVICE AND POSITION DETECTOR

PUB. NO.: 02-300816 [JP 2300816 A]

PUBLISHED: December 13, 1990 (19901213)

INVENTOR(s): FUJIMOTO MAKOTO

APPLICANT(s): MATSUSHITA ELECTRIC IND·CO LTD [000582] (A Japanese Company or Corporation), JP (Japan)

APPL. NO.: 01-120804 [JP 89120804]

FILED: May 15, 1989 (19890515)

JOURNAL: Section: P, Section No. 1172, Vol. 15, No. 84, Pg. 58, February 27, 1991 (19910227)

ABSTRACT

PURPOSE: To eliminate constraint to regulate usage only on a desk, etc., by the coordinate input of an instruction part by moving in all directions.

CONSTITUTION: A coordinate instruction can be performed by directing a coordinate instruction part 101 having **light emitting elements** 401-403 to a coordinate point on the display picture plane of a display part 103, and moving it in a direction of targeted coordinate. The motion of the coordinate instruction part is detected at the light receiving element 409 of a light receiving part 102 installed in the neighborhood of the display part as the change of **luminous intensity** from the **light emitting element**. At the light receiving part 102, the **angular** change of the coordinate instruction part 101 can be obtained from the **detected** change of the **luminous intensity**, and it is sent to the display part 103, and at the display part 103, a display coordinate value is updated setting the angular change as the coordinate change of the display part 103, then, it is transferred to a new display coordinate. The coordinate instruction is completed when a displayed coordinate reaches the targeted coordinate, then, the input of the targeted coordinate is completed. Thereby, it is possible to eliminate the constraint to regulate the usage only on a specific place such as the desk, etc.

25/3,AB/13 (Item 7 from file: 347)

DIALOG(R)File 347:JAPIO

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02987116

ENCODER

PUB. NO.: 01-284716 [JP 1284716 A]

PUBLISHED: November 16, 1989 (19891116)

INVENTOR(s): TSUKIJI MASAAKI

NISHIMURA TETSUJI

ISHIZUKA AKIRA

ISHII SATORU

APPLICANT(s): CANON INC [000100] (A Japanese Company or Corporation), JP (Japan)

APPL. NO.: 63-113083 [JP 88113083]

FILED: May 10, 1988 (19880510)

JOURNAL: Section: P, Section No. 1001, Vol. 14, No. 61, Pg. 4,

February 05, 1990 (19900205)

ABSTRACT

PURPOSE: To prevent **laser luminous** flux from exiting from the case of the encoder by detecting whether or not coherent **luminous** flux for **measurement** and a scale are in prescribed position relation and controlling the oscillation of a **laser** and the cutoff of **laser** light with a detection signal.

CONSTITUTION: The **luminous** flux from the **laser** 1 is made incident on a diffraction grating 3 through a collimator lens 2. Diffracted light beams of positive and negative (m)th order which are diffracted by a diffraction grating 3 are passed through 1/4-wavelength plates 5(sub 1) and 5(sub 2), reflected by corner cube reflecting mirrors 4(sub 1) and 4(sub 2), and made incident again on the diffraction grating 3 to become diffracted light beams of positive and negative (m)th order, which are put one over the other and split into two pieces of **luminous** flux by a beam splitter 6 to strike on light receiving elements 8(sub 1) and 8(sub 2) through polarizing plates 7(sub 1) and 7(sub 2). A **light emitting element** 10, a condenser lens 11, and a light receiving element 12 are put in a case and when the light receiving element 12 does not light-receive **luminous** flux below certain **intensity**, a control means 13 stops the oscillation of the **laser** to prevent the **laser luminous** flux from exiting from the case 9 through a shutter mechanism, thereby eliminating adverse influence upon human bodies.

30/3,AB/1 (Item 1 from file: 347)  
DIALOG(R)File 347:JAPIO  
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04543973

ELECTROLUMINESCENT ELEMENT

PUB. NO.: 06-215873 [JP 6215873 A]  
PUBLISHED: August 05, 1994 (19940805)  
INVENTOR(s): HATTORI TAMOTSU  
ISHIHARA HAJIME . . . . .  
KATAYAMA MASAYUKI  
ITO NOBUE  
APPLICANT(s): NIPPONDENSO CO LTD [000426] (A Japanese Company or Corporation), JP (Japan)  
RES DEV CORP OF JAPAN [330319] (A Japanese Company or Corporation), JP (Japan)  
APPL. NO.: 05-023732 [JP 9323732]  
FILED: January 18, 1993 (19930118)  
JOURNAL: Section: E, Section No. 1624, Vol. 18, No. 573, Pg. 78,  
November 02, 1994 (19941102)

ABSTRACT

PURPOSE: To provide an **EL element** excellent in **luminance** and **luminous efficiency** with good reproducibility.

CONSTITUTION: An **EL element** 10 is formed by successively laminating, on a glass base, a **lower electrode** 2, a **lower insulating layer** 3, a **light emitting layer** 4, an **upper insulating layer** 3 and an **upper electrode** 6 in the order. In the **light emitting layer** 4, VI/II ratio of a base material is higher than 0.97 and lower than 1.0, and the halogen/rare earth element ratio of a **luminescence center** material exceeds 2.5. The stoichiometric ratio of the base material and the ratio of rare earth element to halogen of the **luminescence center** material in the **light emitting layer** are controlled in this way, whereby many halogens can be present in the periphery of the **luminescence center** element to induce the splitting of the crystal field around the **luminescence center** element. Thus, the emission spectrum is split in the **light emitting layer** to increase the integrated intensity, whereby **luminance** and **luminous efficiency** can be improved. Thus, an **EL element** excellent in **luminance** and **luminous efficiency** can be provided with good reproducibility regardless of a film forming device or film forming method related to **light emitting layer** formation.

30/3,AB/2 (Item 2 from file: 347)  
DIALOG(R)File 347:JAPIO  
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04011378

MEMBRANE DEVICE

PUB. NO.: 05-003078 [JP 5003078 A]  
PUBLISHED: January 08, 1993 (19930108)  
INVENTOR(s): ANDO MASAHIKO  
APPLICANT(s): HITACHI LTD [000510] (A Japanese Company or Corporation), JP (Japan)  
APPL. NO.: 03-178883 [JP 91178883]

FILED: June 25, 1991 (19910625)  
JOURNAL: Section E, Section No. 1368, Vol. 17, No. 257, Pg. 81, May  
20, 1993 (19930520)

ABSTRACT

PURPOSE: To make the total integration easily by providing plural **electroluminescence(EL) elements**, and laminating the other side element to the transparent electrode side of one side element.

CONSTITUTION: To a transparent electrode 6 side of the first membrane **EL element**, the second membrane **EL element** is laminated, and the **luminous wavelength** of a **luminous layer** 4 is positioned within the wavelength scope of the exciting spectrum of a **luminous layer** 10. In this case, a voltage is applied between a **lower side electrode** 2 and the electrode 6, the **luminous layer** 4 is made in an electric field **luminous condition**, and the voltage is increased. Since all the layers between the **luminous layers** 4 and 10 show a good transparency to the **light emitted** from the **luminous layer** 4, the **light generated** from the **luminous layer** 4 is radiated to the **luminous layer** 10 as it is. As a result, the **luminous layer** 10 is made in an exciting light **luminous condition**, and its **luminous intensity** is increased following the increase of the **luminous intensity** of the **luminous layer** 4. Consequently, the exciting light **luminous intensity** of the second **EL element** can be controlled by the voltage applied between the electrodes 2 and 6, the structure is made simple, and the overall integration can be made easily.

30/3,AB/3 (Item 3 from file: 347)  
DIALOG(R) File 347:JAPIO  
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03456789  
MANUFACTURE OF THIN-FILM ELECTROLUMINESCENCE ELEMENT

PUB. NO.: 03-119689 [JP 3119689 A]  
PUBLISHED: May 22, 1991 (19910522)  
INVENTOR(s): TAKEMURA KENZO  
YOSHIDA TAKESHI  
APPLICANT(s): HITACHI CHEM CO LTD [000445] (A Japanese Company or Corporation), JP (Japan)  
APPL. NO.: 01-256868 [JP 89256868]  
FILED: September 30, 1989 (19890930)  
JOURNAL: Section E, Section No. 1101, Vol. 15, No. 323, Pg. 28,  
August 16, 1991 (19910816)

ABSTRACT

PURPOSE: To improve **luminous intensity** and **luminescence** outside extracting efficiency by roughening the surface of a light emitting layer after forming the light emitting layer.

CONSTITUTION: A transparent electrode 2, a lower insulating layer 3, a light emitting layer 4, an upper insulating layer 5, and a back electrode 6 are formed in sequence on a transparent insulating substrate 1 such as a glass substrate to form an AC type thin-film **EL element**. An ITO film is formed on the transparent electrode 2 and an Al film is formed on the back electrode 6 by deposition respectively, and a single layer or multiple layers of Si(sub

$\text{N}_{\text{2}}$ (sub 4),  $\text{SiO}$ (sub 2), and  $\text{Ta}(\text{sub 2})\text{O}$ (sub 3) are formed on the lower and upper insulating layers 3 and 5 by sputtering.  $\text{ZnS}$  containing a small quantity of Mn is formed by deposition as a luminous center on the light emitting layer 4, and it is heat-treated at 500-600 deg.C in vacuum. After the light emitting layer 4 is formed, the surface of the layer 4 is roughened by mechanical processing or chemical reaction processing. For mechanical processing, for example, the surface of the light emitting layer 4 is roughened with a polishing agent such as alumina with the grain size about several  $\mu\text{m}$ , then it is cleaned with pure water, and it is dried at 300-400 deg.C in vacuum.

30/3,AB/4 (Item 4 from file: 347)  
DIALOG(R)File 347:JAPIO  
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03089594  
THIN FILM EL ELEMENT AND MANUFACTURE THEREOF

PUB. NO.: 02-065094 [JP 2065094 A]  
PUBLISHED: March 05, 1990 (19900305)  
INVENTOR(s): YOSHIOKA TOSHIHIRO  
              NUNOMURA KEIJI  
APPLICANT(s): NEC CORP [000423] (A Japanese Company or Corporation), JP  
              (Japan)  
APPL. NO.: 63-215521 [JP 88215521]  
FILED: August 29, 1988 (19880829)  
JOURNAL: Section: E, Section No. 930, Vol. 14, No. 239, Pg. 107, May  
              21, 1990 (19900521)

ABSTRACT

PURPOSE: To obtain a thin film El element with high luminous efficiency while maintaining the color tone as a red light emitting element by using thin film phosphors activated with Eu on a base material made of a mixed crystal of CaS and CaSe for a light emitting layer.

CONSTITUTION: A transparent electrode 2 and the first insulator layer 3 made of  $\text{Al}(\text{sub 2})\text{O}$ (sub 3) are formed on a glass base 1 by the vacuum deposition method or the like. A light emitting layer 4 is formed by the electron beam heating deposition method with a pellet containing Eu in a mixed crystal of CaS and CaSe of an evaporation source so that the light emitting layer 4 having a base material with the preset Se concentration is formed on this base. The second insulator layer 5 of  $\text{Al}(\text{sub 2})\text{O}$ (sub 3) is formed on the light emitting layer 4 without breaking the vacuum state, and an upper Al electrode 6 is finally formed on the second insulator layer 6. A light emitting layer material of a thin film EL element with good red luminescence and high intensity and efficiency can be obtained.

35/3,AB/1 (Item 1 from file: 347)  
DIALOG(R)File 347:JAPIO  
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07445068

**ORGANIC ELECTROLUMINESCENT ELEMENT AND DISPLAY DEVICE**

PUB. NO.: 2002-313579 [JP 2002313579 A]  
PUBLISHED: October 25, 2002 (20021025)  
INVENTOR(s): UEDA NAOYUKI  
TAKADA KAZUNORI  
SHIBANUMA TETSUAKI  
ICHIMURA MARI  
TAMURA SHINICHIRO  
APPLICANT(s): SONY CORP  
APPL. NO.: 2002-006851 [JP 20026851]  
FILED: January 16, 2002 (20020116)  
PRIORITY: 2001-029533 [JP 200129533], JP (Japan), February 06, 2001  
(20010206)

**ABSTRACT**

**PROBLEM TO BE SOLVED:** To provide an organic **electroluminescent element** providing blue light emission at high purity, and a display device capable of providing a full-color display with high color expressibility by using the element.

**SOLUTION:** In the organic **electroluminescent element** 3, in which at least a hole-transporting **layer** 503 and a light emitting **layer** 505 are stacked one above the other from the anode side and sandwiched between a lower **electrode** 4 serving as an **anode** and an upper **electrode** 6 serving as a cathode, the light emitting **layer** 505 is made from a spiro compound and the hole-transporting **layer** 503 is made from a triphenylamine tetramer. In the display device 1, the organic **electroluminescent elements** 3 are aligned as blue light emitting **elements** at a plurality of pixels.

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43/3,AB/1 (Item 1 from file: 347)  
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05206773  
**THIN FILM EL ELEMENT**

PUB. NO.: 08-162273 [JP 8162273 A]  
PUBLISHED: June 21, 1996 (19960621)  
INVENTOR(s): OKADA KATSUHIRO  
TERADA KOSUKE  
MIKAMI AKIYOSHI  
APPLICANT(s): SHARP CORP [000504] (A Japanese Company or Corporation), JP  
(Japan)  
APPL. NO.: 06-297051 [JP 94297051]  
FILED: November 30, 1994 (19941130)

**ABSTRACT**

**PURPOSE:** To provide blue color **electroluminescence** with improved color purity and **luminous intensity** by forming an insulating layer between an **EL electroluminescent** layer consisting of an alkaline earth thiogallate containing Ce and an electrode and making the **EL** layer a multilayer structure by layering a plurality of layers.

**CONSTITUTION:** A lower **electrode** 2, which is a transparent electrode made of ITO, etc., is formed on one surface of a light transmissive substrate 1 of glass. On the **electrode**, a lower insulating layer 3 composed of a composite film consisting of a SiO<sub>2</sub> film and a Si<sub>3</sub>N<sub>4</sub> film is formed. More on the layer, a ZnS film 4 is formed by a high frequency sputtering method. Further, a thiogallate-based **electroluminescent** layer 5 containing Sr<sub>2</sub>Ga<sub>2</sub>S<sub>5</sub>:Ce is formed by a high frequency sputtering method. Moreover on the resulting layer, an intermediate insulating layer 6 of Si<sub>3</sub>N<sub>4</sub> is formed by a high frequency sputtering method. Then, on the layer, a ZnS layer 4 and an **electroluminescent** layer 5 are formed. On the obtained layer, an upper insulating layer composed of a composite film 7 consisting of a Si<sub>3</sub>N<sub>4</sub> film and a SiO<sub>2</sub> film is formed. Finally on the insulating layer, an **upper electrode** 8 is formed by Al evaporation. That is, the **EL** element is made to have a multilayer structure by layering a plurality of layers, for example, two by two of the ZnS layer 4 and the **electroluminescent** layer 5.

43/3,AB/2 (Item 2 from file: 347)  
DIALOG(R) File 347:JAPIO  
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04543973  
**ELECTROLUMINESCENT ELEMENT**

PUB. NO.: 06-215873 [JP 6215873 A]  
PUBLISHED: August 05, 1994 (19940805)  
INVENTOR(s): HATTORI TAMOTSU  
ISHIHARA HAJIME  
KATAYAMA MASAYUKI  
ITO NOBUE  
APPLICANT(s): NIPPONDENSO CO LTD [000426] (A Japanese Company or Corporation), JP (Japan)  
RES DEV CORP OF JAPAN [330319] (A Japanese Company or

APPL. NO.: Corporation), JP (Japan)  
05-023732 [JP 9323732]  
FILED: January 18, 1993 (19930118)  
JOURNAL: Section: E, Section No. 1624, Vol. 18, No. 573, Pg. 78,  
November 02, 1994 (19941102)

#### ABSTRACT

PURPOSE: To provide an **EL element** excellent in luminance and luminous efficiency with good reproducibility.

CONSTITUTION: An **EL element**, 10 is formed by successively laminating, on a glass base, a **lower electrode** 2, a **lower insulating layer** 3, a **light emitting layer** 4, an **upper insulating layer** 3 and an **upper electrode** 6 in the order. In the **light emitting layer** 4, VI/II ratio of a base material is higher than 0.97 and lower than 1.0, and the halogen/rare earth element ratio of a **luminescence center** material exceeds 2.5. The stoichiometric ratio of the base material and the ratio of rare earth element to halogen of the **luminescence center** material in the **light emitting layer** are controlled in this way, whereby many halogens can be present in the periphery of the **luminescence center** element to induce the splitting of the crystal field around the **luminescence center** element. Thus, the emission spectrum is split in the **light emitting layer** to increase the integrated intensity, whereby luminance and luminous efficiency can be improved. Thus, an **EL element** excellent in luminance and luminous efficiency can be provided with good reproducibility regardless of a film forming device or film forming method related to light emitting layer formation.

43/3,AB/3 (Item 3 from file: 347)  
DIALOG(R)File 347:JAPIO  
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04011378  
MEMBRANE DEVICE

PUB. NO.: 05-003078 [JP 5003078 A]  
PUBLISHED: January 08, 1993 (19930108)  
INVENTOR(s): ANDO MASAHIKO  
APPLICANT(s): HITACHI LTD [000510] (A Japanese Company or Corporation), JP (Japan)  
APPL. NO.: 03-178883 [JP 91178883]  
FILED: June 25, 1991 (19910625)  
JOURNAL: Section: E, Section No. 1368, Vol. 17, No. 257, Pg. 81, May 20, 1993 (19930520)

#### ABSTRACT

PURPOSE: To make the total integration easily by providing plural **electroluminescence(EL) elements**, and laminating the other side element to the transparent electrode side of one side element.

CONSTITUTION: To a transparent electrode 6 side of the first membrane **EL element**, the second membrane **EL element** is laminated, and the **luminous wavelength** of a **luminous layer** 4 is positioned within the wavelength scope of the exciting spectrum of a **luminous layer** 10. In this case, a voltage is applied between a **lower side electrode** 2 and the electrode 6, the **luminous layer** 4 is made in an electric field **luminous** condition, and the voltage is increased. Since all the layers between the **luminous**

layers 4 and 10 show a good transparency to the light emitted from the luminous layer 4, the light generated from the luminous layer 4 is radiated to the luminous layer 10 as it is. As a result, the luminous layer 10 is made in an exciting light luminous condition, and its luminous intensity is increased following the increase of the luminous intensity of the luminous layer 4. Consequently, the exciting light luminous intensity of the second EL element can be controlled by the voltage applied between the electrodes 2 and 6, the structure is made simple, and the overall integration can be made easily.

43/3,AB/4 (Item 4 from file: 347)  
DIALOG(R)File 347:JAPIO  
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03456789  
MANUFACTURE OF THIN-FILM ELECTROLUMINESCENCE ELEMENT

PUB. NO.: 03-119689 [JP 3119689 A]  
PUBLISHED: May 22, 1991 (19910522)  
INVENTOR(s): TAKEMURA KENZO  
YOSHIDA TAKESHI  
APPLICANT(s): HITACHI CHEM CO LTD [000445] (A Japanese Company or Corporation), JP (Japan)  
APPL. NO.: 01-256868 [JP 89256868]  
FILED: September 30, 1989 (19890930)  
JOURNAL: Section: E, Section No. 1101, Vol. 15, No. 323, Pg. 28,  
August 16, 1991 (19910816)

ABSTRACT

PURPOSE: To improve luminous intensity and luminescence outside extracting efficiency by roughening the surface of a light emitting layer after forming the light emitting layer.

CONSTITUTION: A transparent electrode 2, a lower insulating layer 3, a light emitting layer 4, an upper insulating layer 5, and a back electrode 6 are formed in sequence on a transparent insulating substrate 1 such as a glass substrate to form an AC type thin-film EL element. An ITO film is formed on the transparent electrode 2 and an Al film is formed on the back electrode 6 by deposition respectively, and a single layer or multiple layers of Si<sub>(sub 2)</sub>N<sub>(sub 4)</sub>, SiO<sub>(sub 2)</sub>, and Ta<sub>(sub 2)</sub>O<sub>(sub 3)</sub> are formed on the lower and upper insulating layers 3 and 5 by spattering. ZnS containing a small quantity of Mn is formed by deposition as a luminous center on the light emitting layer 4, and it is heat-treated at 500-600 deg.C in vacuum. After the light emitting layer 4 is formed, the surface of the layer 4 is roughened by mechanical processing or chemical reaction processing. For mechanical processing, for example, the surface of the light emitting layer 4 is roughened with a polishing agent such as alumina with the grain size about several  $\mu\text{m}$ , then it is cleaned with pure water, and it is dried at 300-400 deg.C in vacuum.

43/3,AB/5 (Item 5 from file: 347)  
DIALOG(R)File 347:JAPIO  
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03452586  
ORGANIC ELECTROLUMINESCENT ELEMENT

PUB. NO.: 03-115486 [JP 3115486 A]  
PUBLISHED: May 16, 1991 (19910516)  
INVENTOR(s): EKUSA TAKASHI  
APPLICANT(s): TOSHIBA CORP [000307] (A Japanese Company or Corporation), JP  
(Japan)  
APPL. NO.: 01-254960 [JP 89254960]  
FILED: September 29, 1989 (19890929)  
JOURNAL: Section: C, Section No. 857, Vol. 15, No. 313, Pg. 38, August  
09, 1991 (19910809)

ABSTRACT

PURPOSE: To obtain a high yield of an organic **electroluminescent element** with good characteristics, having an organic thin film layer that withstands a process of forming an **upper electrode** by using a specified polymer as a **luminescent organic dye**.

CONSTITUTION: An organic **electroluminescent element** having an organic thin film prepared by laminating a hole transfer layer and an electron transfer layer, which are made of an organic dye and at least one of which is **luminescent**, between two electrodes at least one of which is transparent, wherein a polymer having at least two organic dyes of a band gap of at least 3eV combined through a nonconjugated bond (e.g. a carbon-carbon single bond, a hydrocarbon residue, an ester linkage, a carbonyl residue, an amide linkage or an ether linkage) is used as a luminescent organic dye. For example, a **luminescent bipyrenyl** of formula I is used for the hole transfer layer, and dinitrobifluorenonyl of formula II for the electron transfer layer. This technique gives a high yield of an organic **electroluminescent element** with good characteristics without suffering a damage to the organic thin film layer when an **upper electrode** is formed\*\* and without causing a reduction in **luminous intensity** and short circuit.

43/3, AB/6 (Item 6 from file: 347)  
DIALOG(R) File 347: JAPIO  
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03089594  
THIN FILM EL ELEMENT AND MANUFACTURE THEREOF

PUB. NO.: 02-065094 [JP 2065094 A]  
PUBLISHED: March 05, 1990 (19900305)  
INVENTOR(s): YOSHIOKA TOSHIHIRO  
NUNOMURA KEIJI  
APPLICANT(s): NEC CORP [000423] (A Japanese Company or Corporation), JP  
(Japan)  
APPL. NO.: 63-215521 [JP 88215521]  
FILED: August 29, 1988 (19880829)  
JOURNAL: Section: E, Section No. 980, Vol. 14, No. 239, Pg. 107, May  
21, 1990 (19900521)

ABSTRACT

PURPOSE: To obtain a thin film **El element** with high **luminous efficiency** while maintaining the color tone as a red light emitting element by using thin film phosphors activated with Eu on a base material made of a mixed crystal of CaS and CaSe for a light emitting layer.

CONSTITUTION: A transparent electrode 2 and the first insulator layer 3 made of Al<sub>2</sub>O<sub>3</sub> are formed on a glass base 1 by the vacuum

deposition method or the like. A light emitting layer 4 is formed by the electron beam heating deposition method with a pellet containing Eu in a mixed crystal of CaS and CaSe of an evaporation source so that the light emitting layer 4 having a base material with the preset Se concentration is formed on this base. The second insulator layer 5 of Al<sub>2</sub>O<sub>3</sub> is formed on the light emitting layer 4 without breaking the vacuum state, and an upper Al electrode 6 is finally formed on the second insulator layer 6. A light emitting layer material of a thin film **EL element** with good red **luminescence** and high **intensity** and efficiency can be obtained.

43/3,AB/7 (Item 7 from file: 347)  
DIALOG(R)File 347:JAPIO  
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02922794  
**HIGH-INTENSITY EL ELEMENT**

PUB. NO.: 01-220394 [JP 1220394 A]  
PUBLISHED: September 04, 1989 (19890904)  
INVENTOR(s): TAGUCHI KAZUO  
KIZAWA KENICHI  
TAMURA KATSU  
NAKAYAMA TAKAHIRO  
ABE YOSHIO  
SATO AKIRA  
HASHIMOTO KENICHI  
APPLICANT(s): HITACHI LTD [000510] (A Japanese Company or Corporation), JP (Japan)  
APPL. NO.: 63-044628 [JP 8844628]...  
FILED: February 29, 1988 (19880229)  
JOURNAL: Section: E, Section No. 852, Vol. 13, No. 534, Pg. 140, November 29, 1989 (19891129)

#### ABSTRACT

PURPOSE: To efficiently extract the illuminated light and improve the intensity of a luminous layer by providing a lower electrode, an insulating layer, a luminous layer and an upper electrode in sequence on a substrate and providing a mirror reflecting the light on one face of the luminous layer.

CONSTITUTION: A lower electrode 2 is formed in a stripe shape on a glass substrate 1. A Ta<sub>2</sub>O<sub>3</sub> film with the thickness of 1μm is formed as the first insulating layer 3 on the electrode 2, then the surface is formed in a wave shape. The Ta<sub>2</sub>O<sub>3</sub> film is formed by the spattering method, the wave shape is formed by the chemical etching method. A mirror 7 is formed on the insulating layer 3. A metal aluminum film with the thickness of 0.005μm, for example, is used for the mirror 7, the mirror 7 suppresses the luster at the cone-shaped bottom portion and prevents the reflection of the external light. A luminous layer 4 is formed on the mirror 7, the second insulating layer 2 is formed on the luminous layer 4, a back electrode 6 is formed on it. The illuminated light is efficiently extracted, thereby the intensity of the luminous layer can be improved.

43/3,AB/8 (Item 8 from file: 347)  
DIALOG(R)File 347:JAPIO  
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02812094

ELECTROLUMINESCENT ELEMENT

PUB. NO.: 01-109694 [JP 1109694 A]

PUBLISHED: April 26, 1989 (19890426)

INVENTOR(s): TAKABAYASHI MEIJI

IIZUKA KIYOSHI

TERADA JUNJI

HAYAKAWA SAI

HASHIMOTO SHIGERU .. . . . .

TANIGUCHI YASUSHI

KAMIYA OSAMU

APPLICANT(s): CANON INC [000100] (A Japanese Company or Corporation), JP  
(Japan)

APPL. NO.: 62-266255 [JP 87266255]

FILED: October 23, 1987 (19871023)

JOURNAL: Section: E, Section No. 800, Vol. 13, No. 350, Pg. 59, August  
07, 1989 (19890807)

ABSTRACT

PURPOSE: To effectively enclose luminescence between clad layers and increase the luminescence intensity of an EL element by pinching a luminous layer between two insulating clad layers with the refraction factor lower than that of the luminous layer.

CONSTITUTION: A lower electrode 2 is provided on a glass substrate 1, a material with the refraction factor of 2 or above such as Mn-doped ZnS(refraction factor 2.4)...is used for a luminous layer 4, which is pinched by clad layers 3 and 4 with the refraction factor of 2 or below such as CaF<sub>2</sub> (refraction factor 1.38), for example. When the difference of the refraction factor between the luminous layer 4 and the clad layers is selected to 1.0 or above, it is effective. An upper electrode 6 is provided, and the AC voltage is applied across the electrodes 2 and 6. The thickness of the clad layers 3 and 5 is set to about 0.5-1μm, the clad layers are formed by deposition or the like, and a light emitting surface 8 is formed by etching or the like. Luminescence is effectively enclosed by the luminous layer 4 according to this constitution, and luminescence with high intensity is obtained from the light emitting surface 8.

50/3,AB/1 (Item 1 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
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015755638  
WPI Acc No: 2003-817840/200377  
XRAM Acc No: C03-228735  
XRXPX Acc No: N03-654479

Novel hydrocarbon compound for organic **electroluminescent element**, has anthracene ring containing specific group as substituent, and directly bonded fluorine ring.. . .

Patent Assignee: MITSUI CHEM INC (MITA )

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
JP 2003128651	A	20030508	JP 2001317783	A	20011016	200377 B

Priority Applications (No Type Date): JP 2001317783 A 20011016

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
JP 2003128651	A	99	C07D-209/86	

Abstract (Basic): JP 2003128651 A

Abstract (Basic):

NOVELTY - A hydrocarbon compound having an anthracene ring containing at least one group of preset formula as a substituent, and a directly bonded fluorine ring, is new.

DETAILED DESCRIPTION - A hydrocarbon compound having an anthracene ring containing at least one group of formula (I) as a substituent, and a directly bonded fluorine ring, is new. FORMULA (I), PAGE 2

Ar<sub>1</sub>, Ar<sub>2</sub>=(un)substituted arylene group; and

Z=a connection group.

INDEPENDENT CLAIMS are included for the following:

(1) organic **electroluminescent electrode material**; and  
(2) organic **electroluminescent element** containing at least one layer containing the organic **electroluminescent electrode material** between a pair of electrodes.

USE - For organic **electroluminescent element** (claimed).

ADVANTAGE - The organic **electroluminescent element** obtained using the hydrocarbon compound has excellent luminescence with improved intensity.

DESCRIPTION OF DRAWING(S) - The figure shows an outline structural drawing of an organic **electroluminescent element**.

positive hole transportation layer (3)

light emitting layer (4)

electron transportation layer (5)

pp; 99 DwgNo 1/8

50/3,AB/2 (Item 2 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
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015484068  
WPI Acc No: 2003-546215/200352  
XRAM Acc No: C03-148489  
XRXPX Acc No: N03-433620

Organic **electroluminescent element** for high intensity light emission, has light emitting layer

comprising host agent consisting of conductive polymer, and dope agent which radiates phosphor.

Patent Assignee: HONDA MOTOR CO LTD (HOND )

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
JP 2003077673	A	20030314	JP 2001297338	A	20010927	200352 B

Priority Applications (No Type Date): JP 2001185486 A 20010619

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
JP 2003077673	A	18	H05B-033/14	*** . . . . .

Abstract (Basic): JP 2003077673 A

Abstract (Basic):

NOVELTY - The organic **electroluminescent element** has a hole carrying layer (20), a light emitting layer (40) and an electron carrying layer (60), formed sequentially between an anode layer (10) and a cathode layer (70). The light emitting layer has a dope agent (41) which radiates phosphor, and a host agent (42) comprising conductive polymer.

USE - As organic **electroluminescent element** for light emission.

ADVANTAGE - Since the ionization potential of conductive polymer in host agent is comparatively small, the organic **electroluminescent element** has high luminous efficiency and high intensity for light emission. The solvent for film-forming with the hole carrying layer and electron carrying layer is chosen easily.

DESCRIPTION OF DRAWING(S) - The figure shows the structure of organic **electroluminescent element**:

anode layer (10)  
hole carrying layer (20)  
light emitting layer (40)  
dope agent (41)  
host agent (42)  
electron carrying layer (60)  
cathode layer (70)

pp; 18 DwgNo 1/5

50/3,AB/3 (Item 3 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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015053565

WPI Acc No: 2003-114081/200311

XRAM Acc No: C03-029441

XRPX Acc No: N03-090780

Organic **electroluminescent element** for full color display, contains light emission layer containing fluorescent and phosphorescent compounds

Patent Assignee: KONICA CORP (KONS ); KINOSHITA M (KINO-I); KITA H (KITA-I); OSHIYAMA T (OSHI-I); YAMADA T (YAMA-I)

Inventor: KINOSHITA M; KITA H; OSHIYAMA T; YAMADA T

Number of Countries: 028 Number of Patents: 003

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
EP 1267428	A2	20021218	EP 2002254090	A	20020612	200311 B
JP 2003064355	A	20030305	JP 2002171356	A	20020612	200326

US 20030091860 A1 20030515 US 2002167120 A 20020610 200335

Priority Applications (No Type Date): JP 2001181543 A 20010615

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

EP 1267428 A2 E 57 H01L-051/20

Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT  
LI LT LU LV MC MK NL PT RO SE SI TR

JP 2003064355 A 45 C09K-011/06

US 20030091860 A1 H05B-033/14

Abstract (Basic): EP 1267428 A2 .....

Abstract (Basic):

NOVELTY - An organic **electroluminescent element** has a light emission layer with fluorescent and phosphorescent compounds. The fluorescent compound has a nitrogen atom number to carbon atom number ratio of 0-0.05. The maximum emission wavelength of light emitted according to **electroluminescence** of the element is longer than the maximum fluorescence wavelength of the fluorescent compound.

USE - For full color display (claimed).

ADVANTAGE - The invention **emits** light with high emission luminance at reduced power consumption.

pp; 57 DwgNo 0/1

50/3,AB/4 (Item 4 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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013417559 .....

WPI Acc No: 2000-589497/200056

XRAM Acc No: C00-176116

XRPX Acc No: N00-436283

Organic **electroluminescent element** for display devices, has multi-layered organic thin film comprising multi-colored luminescent layer having color development area which contains aromatic tertiary amine compound

Patent Assignee: TOYO INK MFG CO LTD (TOXW )

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
JP 2000150161	A	20000530	JP 98324628	A	19981116	200056 B

Priority Applications (No Type Date): JP 98324628 A 19981116

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

JP 2000150161 A 15 H05B-033/14

Abstract (Basic): JP 2000150161 A .....

Abstract (Basic):

NOVELTY - The organic **electroluminescent element** has a multi-layered organic thin film (3) comprising multi-colored luminescent layer, formed between a pair of electrodes (2,4). The multi-colored luminescent layer has several color development areas, of which each area contains aromatic tertiary amine compound.

USE - For display devices.

ADVANTAGE - The **electroluminescent element** has high intensity, luminous efficiency and durability.

DESCRIPTION OF DRAWING(S) - The figure shows model of multi-colored

light emitting organic electroluminescent element.

Glass substrate (1)  
Anode (2)  
Organic thin film (3)  
Cathode (4)  
pp; 15 DwgNo 1/3

50/3,AB/5 (Item 5 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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011519024

WPI Acc No: 1997-495510/199746

XRAM Acc No: C97-157683

XRPX Acc No: N97-412674

Organic **EL element** - has **cathode** provided with oxygen whose density is 1 atomic per-cent or less along with alkali metal and alkaline earth metal

Patent Assignee: IDEMITSU KOSAN CO LTD (IDEK )

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
JP 9232079	A	19970905	JP 9636236	A	19960223	199746 B

Priority Applications (No Type Date): JP 9636236 A 19960223

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
JP 9232079	A	16		H05B-033/26	

Abstract (Basic): JP 9232079 A

The **EL element** has an **anode** and **cathode**. An organic substance **layer** including a **light emitting layer** containing organic **luminescent** material configures **anode**. A structure with sequentially layered alkali metal and alkaline earth metal having work function less than 2.9eV represents the **cathode**. The composition rate of metal alloy is 0.5-5 at%.

The work function of the metal alloy is more than 3eV. The thickness of the area containing a metal alloy lies between 5- 50nm. The density of oxygen added to the **cathode** layer is made 1 at% or less.

ADVANTAGE - Excels in homogeneity luminosity. Improves electric power. Prolongs life time.

Dwg.0/0

50/3,AB/6 (Item 6 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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008458251

WPI Acc No: 1990-345251/199046

XRAM Acc No: C90-149804

XRPX Acc No: N90-263910

**Electroluminescent element** - has luminescent layer composed of organic thin film layer between two electrodes

Patent Assignee: RICOH KK (RICO )

Number of Countries: 002 Number of Patents: 003

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
JP 2250292	A	19901008	JP 8972767	A	19890323	199046 B
US 5085947	A	19920204	US 89459326	A	19891229	199208
JP 2879080	B2	19990405	JP 8972767	A	19890323	199919

Priority Applications (No Type Date): JP 8972767 A 19890323

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
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JP 2250292	A	4		
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US 5085947	A	6		
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JP 2879080	B2	4	H05B-033/14	Previous Publ. patent JP 2250292
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Abstract (Basic): JP 2250292 A

**Electroluminescent element** has a luminescent

layer composed organic thin film layer, between two electrodes. The luminescent layer is a thin film having stacked-layered structure of organic cpd. having hole transporting function and luminescent function, and the organic cpd. having the electron transporting function, or the thin film of the mixt. of the cpds.

The **electroluminescent element** is composed of a base such as glass base or synthetic resin base, an **anode** composed of evapn. film of metal such as Pt, Au and Pd, sputter film, an oxide thin film of tin or indium-tin, or organic electrically conductive thin film, which is transparent at a wavelength area of more than 400 nm, a **luminescent** layer of the stacked-layered structure.

USE/ADVANTAGE - The **electroluminescent element** of high brightness and high durability, can be obtd. The **luminescent** property can be kept for long period. (4pp Dwg.No.1/1)

Abstract (Equivalent): US 5085947 A

New **electroluminescent** device comprises a positive electrode an a **luminescent** layer in direct contact with it comprising 1st organic having positive hole transport and **luminescent** properties of triphenylamine cpds. of formula (I) stilbene derivs. of formula (II) or pyrazoline derivs. of formula (III) and a 2nd organic cpd. having electron transporting property viz. oxindole deriv. of formula (IV) converting electric energy to photo-energy and a negative electrode in direct contact with this **luminescent** layer. The **luminescent** layer is 200-3000A thick with wt. ratio of 1st:2nd organic cpds. 10/90-90/10. The positive electrode is of Au, Pt, Pd, SnO, In/SnO or an organoelectroconductor, and is **transparent** to 400+ nm light. The negative electrode is of Mg, Al, Ag or In. Or 1st organic cpd. and the 2nd organic cpd. may be in separate layers in contact, with the 1st layer of 100-2000A thick and the 2nd 100-1500 A. Prodn. is e.g. by vacuum or sputtering deposition of the successive layers in turn on a glass or synthetic resin substrate layer. USE - Light emitting devices of large surface area with high luminous intensity using 100 D.C. field.

(6pp

50/3,AB/7 (Item 7 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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007662265

WPI Acc No: 1988-296197/198842

XRAM Acc No: C91-012655

XRPX Acc No: N91-022793

Thin film **electroluminescent element** - comprising  
luminescent film and transparent electrode on substrate  
Patent Assignee: NIPPON JIDOSHA BUHIN SOGO (NIJI ); NIPPON SOKEN KK (NSOK

)  
Number of Countries: 002 Number of Patents: 002

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
JP 63216290	A	19880908			198842	B
US 4983469	A	19910108	US 89312293	A	19890217	199105

Priority Applications (No Type Date): JP 8748027 A 19870303; JP 86268348 A  
19861111

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
JP 63216290	A		3		

Abstract (Basic): JP 63216290 A

A thin film **electroluminescent element** comprises: 1) a substrate; 2) two electrode films, one being a transparent film formed on a first surface of the substrate, and made of a transparent material; and 3) a **luminescent** film formed between the two electrode film for **emitting** white light through the **transparent** electrode film upon the application of an electric field between the two electrode films; where the luminescent film includes three contiguous layers, one formed of a basic material having no **luminescent** centre which is interposed between the other two **luminescent** layers formed of basic material and having different **luminescent** centres.

USE/ADVANTAGE - The invention is used to mfr. thin display panels to replace **cathode ray tubes**, and as back illumination to a liquid crystal display. The **film emits** white light of excellent tone, including red, green and blue light as the primary colours with sufficiently large **luminous intensity**. (First major country equivalent to J63216290-A) (3pp dwg.No.1/9)

54/3,AB/1 (Item 1 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
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015173664  
WPI Acc No: 2003-234192/200323  
XRPX Acc No: N03-186428

Organic **electroluminescent element** for copier, includes hole prevention layer containing carbazolyl group and phenylene group compounds  
Patent Assignee: MITSUBISHI CHEM CORP (MITU )  
Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
JP 2003031371	A	20030131	JP 2001216944	A	20010717	200323 B

Priority Applications (No Type Date): JP 2001216944 A 20010717

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
JP 2003031371	A	23	H05B-033/22	

Abstract (Basic): JP 2003031371 A

Abstract (Basic):

NOVELTY - A hole prevention layer (6) formed on the upper surface of a **light-emitting layer** (5), contains carbazolyl group and phenylene group compounds.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is included for blue **light-emitting element**.

USE - For copier, liquid crystal display, measuring instrument, flat-panel display, office automation apparatus, flat television, vehicle-mounted display device, mobile telephone, display board, marker lamp, etc.

ADVANTAGE - Ensures drive stability of **electroluminescent element** and increases luminous intensity.

DESCRIPTION OF DRAWING(S) - The figure shows a sectional view of the organic **electroluminescent element**. (Drawing includes non-English language text).

**light-emitting layer** (5)  
hole prevention layer (6)  
pp; 23 DwgNo 1/3

54/3,AB/2 (Item 2 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
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014996544  
WPI Acc No: 2004-184946/200418  
XRPX Acc No: N04-146934

Organic **electroluminescent element** for display device, has phosphorescence light emitting layer consisting of phosphorescence luminescent material provided between emission band and electronic transportation belt

Patent Assignee: MATSUSHITA DENKI SANGYO KK (MATU )

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
JP 2004031211	A	20040129	JP 2002187938	A	20020627	200418 B

Priority Applications (No Type Date): JP 2002187938 A 20020627

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes  
JP 2004031211 A 9 H05B-033/14

Abstract (Basic): JP 2004031211 A

Abstract (Basic):

NOVELTY - Emission band (4) containing fluorescent luminescent material is provided between pair of electrodes (2,6). Electronic transportation belt (5) is provided below electrode (6). Phosphorescence light emitting layer (7) which consists of phosphorescence luminescent material, is provided between emission band and electronic transportation belt.

USE - For use in display devices.

ADVANTAGE - Since emission band is touched with layer consisting of phosphorescence luminescent material, outstanding electroluminescent element with small power consumption and high luminous efficiency is obtained.

DESCRIPTION OF DRAWING(S) - The figure shows a sectional view of the organic luminescent element. (Drawing includes non-English language text).

substrate (1)  
electrodes (2,6)  
emission band (4)  
electronic transportation belt (5)  
phosphorescence light emitting layer (7)

pp; 9 DwgNo 1/5

54/3,AB/3 (Item 3 from file: 350)

DIALOG(R) File 350:Derwent WPIX

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010992701

WPI Acc No: 1996-489650/199649

XRPX Acc No: N96-412588

Electroluminescence element driving circuit for wristwatch, LCD appts - has driving pulse generation part which generates driving pulse with duty cycle as specified by control part when switch is in ON state thereby making first transistor to conduct

Patent Assignee: CASIO COMPUTER CO LTD (CASK )

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
JP 8248910	A	19960927	JP 9551524	A	19950310	199649 B

Priority Applications (No Type Date): JP 9551524 A 19950310

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes  
JP 8248910 A 6 G09G-003/12

Abstract (Basic): JP 8248910 A

The driving circuit has a switch (3). When the switch is switched ON, a driving pulse generation part (4) generates a driving pulse to the base of a second transistor (TR2) with the duty cycle as specified by a control part (5). When the driving pulse is in high level, a first transistor (TR1) conducts and produces oscillatory current and a high voltage is supplied to EL element (2).

When the driving pulse is in low level, current is supplied to a first winding (L1) through a capacitor (L2). When the capacitor starts discharging, the first transistor stops conducting. When the

driving pulse is in high level, the first transistor begins to conduct again.

ADVANTAGE - Enables **EL element** to emit light by proper luminance. Reduces electric power consumption.

Dwg.1/5

54/3,AB/4 (Item 1 from file: 347)

DIALOG(R)File 347:JAPIO

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07155276

IMAGE DISPLAY DEVICE

PUB. NO.: 2002-023656 [JP 2002023656 A]

PUBLISHED: January 23, 2002 (20020123)

INVENTOR(s): NAITO KEIJIRO

APPLICANT(s): SEIKO EPSON CORP

APPL. NO.: 2000-201272 [JP 2000201272]

FILED: July 03, 2000 (20000703)

#### ABSTRACT

PROBLEM TO BE SOLVED: To provide an image display device which can be made thin and small in size with low power consumption and a longer life.

SOLUTION: A light source 22 composed of a red **light emitting element** 22R, green **light emitting element** 22G and blue **light emitting element** 22B consisting of organic **EL elements** of the respective colors is disposed on a counter substrate .23. Since a conventional back light is made unnecessary as well as the measures for the use of a back light are not required, the inner structure of the liquid crystal display is simplified, thereby makes the obtained liquid crystal display thin and small in size. Since the **light emitting elements** 22R, 22G, 22B consisting of organic **EL elements** have **features of low electric power** and high luminance, lower **power** consumption and a long life of the liquid crystal display can be realized.

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54/3,AB/5 (Item 2 from file: 347)

DIALOG(R)File 347:JAPIO

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06450819

ORGANIC ELECTROLUMINESCENT ELEMENT AND MANUFACTURE THEREOF

PUB. NO.: 2000-036391 [JP.2000036391. A] . . .

PUBLISHED: February 02, 2000 (20000202)

INVENTOR(s): FUJIMORI SHIGEO

HIMESHIMA YOSHIO

KOHAMA TORU

APPLICANT(s): TORAY IND INC

APPL. NO.: 10-201659 [JP 98201659]

FILED: July 16, 1998 (19980716)

#### ABSTRACT

PROBLEM TO BE SOLVED: To improve characteristics and durability while

lowering the resistance in a second electrode so as to reduce unevenness of luminance, heating, power consumption and a load to a drive circuit by electrically connecting a guide electrode to the second electrode in a predetermined form.

SOLUTION: A first electrode 2 made of excellent conductive transparent material such as tin oxide is formed on a substrate 1a, and plural insulating projections 3 having a desirable shape formed with a conductive part on the surface thereof are provided by patterning on the substrate 1a except for the part provided with the first electrode 2, and thereafter, a thin film layer 10 including a light emitting layer is formed. The projections 3 are formed higher than the thickness of the thin film layer 10. A second electrode 8 made of platinum and aluminum is formed into a stripe by make deposition method so as to cover the surface of the projections 3, and the second electrode 8 is electrically connected to a guide electrode 4 formed in a substrate 1b so as to follow the shape of the light emitting element and having 2 K $\Omega$ /m or less of resistance value through the projections 3. The substrates 1a, 1b are adhered to each other so as to seal the light emitting element, and deterioration of the light emitting characteristic due to the moisture and oxygen is thereby prevented.

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54/3,AB/6 (Item 3 from file: 347)  
DIALOG(R)File 347:JAPIO  
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06272576  
TRANSPARENT ELECTRICAL CONDUCTIVE FILM FOR ELECTROLUMINESCENCE ELEMENT

PUB. NO.: 11-214164 [JP 11214164 A]  
PUBLISHED: August 06, 1999 (19990806)  
INVENTOR(s): YAMADA HIROYUKI  
TATENO KATSUTAKA  
APPLICANT(s): OJI PAPER CO LTD  
APPL. NO.: 10-015206 [JP 9815206]  
FILED: January 28, 1998 (19980128)

#### ABSTRACT

PROBLEM TO BE SOLVED: To provide a transparent electrical conductive film for an electroluminescence element, which keeps its performance stably for a long time even when it is lit continuously using an inverter in a high humidity atmosphere as a packageless electroluminescence element, has performances such as high luminance and low power consumption, and adheres closely on a light emitting body layer satisfactorily.

SOLUTION: This transparent electrical conductive film for a electroluminescence element is formed by accumulating a transparent polymer film, a transparent electrical conductive layer which is made of indium oxide (In<sub>2</sub>O<sub>3</sub>) - tin oxide (SnO<sub>2</sub>) sintered body containing 3 to 15 wt.% of tin oxide (SnO<sub>2</sub>) and has a thickness of 100 to 500  $\text{\AA}$ , and a high dielectric constant resin layer which is made of cyanoalkyl retermed fluororesin having dielectric constant  $\geq 10$  and has a thickness (x) of 3 to 10  $\mu\text{m}$  sequentially on at least one face of the transparent polymer film. When this transparent conductive film for EL is used as, in particular, an electrode for EL, close adhesion on a light

emitting body layer can be increased owing to the high dielectric constant resin layer on the transparent conductive layer. Moreover, it is possible to obtain an EL which does not cause a non-light lit part on the surface of a light emitting body of an EL element and has by far excellent durability, even if the EL is continuously lit in a high humidity atmosphere.

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54/3,AB/7 (Item 4 from file: 347)  
DIALOG(R)File 347:JAPIO  
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04307471  
LINE LUMINESCENCE DISPERSION TYPE EL ELEMENT AND ITS MANUFACTURE

PUB. NO.: 05-299171 [JP 5299171 A]  
PUBLISHED: November 12, 1993 (19931112)  
INVENTOR(s): WAKABAYASHI SHIGEKI  
APPLICANT(s): HOKURIKU ELECTRIC IND CO LTD [327816] (A Japanese Company or Corporation), JP (Japan)  
APPL. NO.: 04-125706 [JP 92125706]  
FILED: April 17, 1992 (19920417)  
JOURNAL: Section: E, Section No. 1508, Vol. 18, No. 91, Pg. 65, February 15, 1994 (19940215)

#### ABSTRACT

PURPOSE: To provide a line luminescence dispersion type EL element and its manufacture capable of obtaining a high-intensity, high-precision luminescence line with a simple structure and easy to manufacture.

CONSTITUTION: A line luminescence dispersion type EL element is provided with a red luminescence layer 18 constituted of an opaque electrode 12 formed on one surface of a transparent resin film 10, a transparent electrode 14 formed on the other face, an EL luminous body 16 provided on one face of the resin film 10 and emitting nearly red light, a green luminescence layer 22 formed with a green light dispersion type EL luminous body 20 on one face of another resin film 10 likewise formed with electrodes, and a blue luminescence layer 26 formed with a blue light dispersion type EL luminous body 24 on one face of another resin film 10 likewise formed with electrodes. Many luminescence layers 18, 22, 26 of three primary colors are laminated in sequence, and an EL luminescence panel illuminated into a line shape from the laminated end face is formed.

54/3,AB/8 (Item 5 from file: 347)  
DIALOG(R)File 347:JAPIO  
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03596675  
DIAMOND LIGHT-EMITTING ELEMENT AND EL LIGHT-EMITTING ELEMENT

PUB. NO.: 03-259575 [JP 3259575 A]  
PUBLISHED: November 19, 1991 (19911119)

INVENTOR(s): KATSUMATA SATOSHI  
APPLICANT(s): IDEMITSU PETROCHEM CO LTD [358507] (A Japanese Company or Corporation), JP (Japan)  
APPL. NO.: 02-056572 [JP 9056572]  
FILED: March 09, 1990 (19900309)  
JOURNAL: Section: E, Section No. 1167, Vol. 16, No. 64, Pg. 99, February 18, 1992 (19920218)

#### ABSTRACT

PURPOSE: To make it possible to emit a white color and an arbitrary color by a single element by a method wherein the element is formed into a constitution having a diamond layer, a boron-containing diamond layer and a nitrogen-containing diamond layer.

CONSTITUTION: A **substrate** 1 is formed of an opaque material or a transparent material. A diamond layer 2 is formed on the **substrate** 1 and is formed as so to **emit** a blue light by not doping an impurity. A boron-containing diamond layer 3 is laminated on the layer 2 and this layer 3 is formed so as to **emit** a green light by doping B as an impurity. A nitrogen-containing diamond layer 4 is formed on this layer 3 and this layer 4 is formed so as to **emit** a red light by doping N as an impurity. The order of lamination of the individual diamond layers is not specially limited, but it is desirable that in case there is an **intensity** between the **luminous intensities** of the individual layers, a layer having a weak luminous intensity becomes an upper layer.

54/3,AB/9 (Item 6 from file: 347)

DIALOG(R) File 347:JAPIO

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03573293

#### THIN FILM EL ELEMENT

PUB. NO.: 03-236193 [JP 3236193 A]  
PUBLISHED: October 22, 1991 (19911022)  
INVENTOR(s): FUJIKURA MAKOTO  
APPLICANT(s): HITACHI CHEM CO LTD [000445] (A Japanese Company or Corporation), JP (Japan)  
APPL. NO.: 02-030215 [JP 9030215]  
FILED: February 09, 1990 (19900209)  
JOURNAL: Section: E, Section No. 1155, Vol. 16, No. 18, Pg. 133, January 17, 1992 (19920117)

#### ABSTRACT

PURPOSE: To improve the reproducibility of the hysteresis characteristic and adhesion and reduce the aging change of a hysteresis by setting the thickness of a photoconductive layer to a specific value or above, and forming an insulating layer with "a specific" compound in a thin film EL element laminated with required layers.

CONSTITUTION: The first conducting film 2, the first insulating layer 3, a light emitting layer 4, the second insulating layer 5, the first high-conductivity layer 6, a photoconductive layer 7, the second high-conductivity layer 8, and the second conducting film 9 are laminated on a **substrate** 1 to form a thin film EL element, the thickness of the layer 7 is set to 0.4μm or above, and the layer 5 is made of a silicon nitride compound. The thin film EL element having good reproducibility of the hysteresis

characteristic between the applied voltage and the **luminous intensity** and high adhesion between the layer 5 and the layer 6 containing amorphous silicon hydroxide and a small aging change of a hysteresis is obtained.

54/3,AB/10 (Item 7 from file: 347)  
DIALOG(R)File 347:JAPIO  
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03118789

MANUFACTURE OF THIN FILM TYPE **ELECTROLUMINESCENCE ELEMENT**

PUB. NO.: 02-094289 [JP 2094289 A]  
PUBLISHED: April 05, 1990 (19900405)  
INVENTOR(s): FUKAO RYUZO  
              OIWA TSUNEMI  
APPLICANT(s): HITACHI MAXELL LTD [000581] (A Japanese Company or Corporation), JP (Japan)  
APPL. NO.: 63-245638 [JP 88245638]  
FILED: September 29, 1988 (19880929)  
JOURNAL: Section: E, Section No. 944, Vol. 14, No. 292, Pg. 8, June 25, 1990 (19900625)

ABSTRACT

PURPOSE: To obtain high **luminous intensity** by forming a **light emitting layer** by the electron beam deposition method in the specific atmosphere with an evaporation source made of ZnS containing Sm and F and specifying the Sm concentration in the layer.

CONSTITUTION: A display side electrode 2 made of a thin film of a transparent conducting material is formed on one **surface** of a base 1 made of glass, and the first dielectric layer 3, a **light emitting layer** 4, the second dielectric layer 5, and a back side electrode 6 made of an Al thin film or a thin film of a transparent conducting material are laminated and formed in sequence on the display side electrode 2. The **light emitting layer** 4 is formed with an evaporation source made of ZnS containing Sm and F by the electron beam deposition method in the atmosphere with the degree of vacuum of  $5 \times 10^{-6}$  Torr or below, and the Sm concentration in the layer is set to 0.2-1.0mol%. An **EL element** with high **luminous intensity** can be obtained.

57/3,AB/1 (Item 1 from file: 350)  
DIALOG(R) File 350:Derwent WPIX  
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015684522

WPI Acc No: 2003-746711/200370

XRPX Acc No: N03-598392

**Electroluminescent display device for light emitting diode printer,** has control unit which controls driving circuit of **electroluminescent element**, to emit light several time per driving cycle

Patent Assignee: NIPPONDENSO CO LTD (NPDE); HATTORI Y (HATT-I); INOUE T (INOUE-I); KATAYAMA M (KATA-I); OSADA M (OSAD-I); SUZUKI H (SUZU-I); UCHIDA T (UCHI-I); YAMAMOTO Y (YAMA-I)

Inventor: HATTORI Y; INOUE T; KATAYAMA M; OSADA M; SUZUKI H; UCHIDA T; YAMAMOTO Y

Number of Countries: 002 Number of Patents: 003

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20030174199	A1	20030918	US 2003367800	A	20030219	200370 B
JP 2003266766	A	20030924	JP 200272274	A	20020315	200372
JP 2003266765	A	20030924	JP 200272220	A	20020315	200372

Priority Applications (No Type Date): JP 2002257668 A 20020903; JP 200272220 A 20020315; JP 200272274 A 20020315

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
US 20030174199	A1	33	B41J-002/435	
JP 2003266766	A	15	B41J-002/44	
JP 2003266765	A	13	B41J-002/44	

Abstract (Basic): US 20030174199 A1

Abstract (Basic):

NOVELTY - The **electroluminescent (EL) display device (2)** includes n scanning electrode driving circuit (11o) which applies scanning voltage to both sides of **EL elements** arranged in an array form. A control unit controls the driving circuit, so that the **EL elements emit light several times per driving cycle.**

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

- (1) driving device for driving **EL elements**;
- (2) printer head;
- (3) driving device for driving print head;
- (4) method of driving EL device; and
- (5) method of driving print head.

USE - **Electroluminescent (EL) display device for printer head (claimed) of light emitting diode (LED) printer and luminescent printer.**

ADVANTAGE - Since the **EL elements emit light several times per driving cycle**, the amount of light integrated per time increases, hence **EL element obtains high luminous power**, even in short emission decay time.

DESCRIPTION OF DRAWING(S) - The figure shows an electric circuit diagram of the **electroluminescent display device**.

- EL elements (1)**
- EL display device (2)**
- scanning electrode (9o)**
- data electrode (10)**
- scanning electrode driving circuit (11o)**

57/3,AB/2 (Item 2 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
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014233626

WPI Acc No: 2002-054324/200207

Related WPI Acc No: 2002-025273

XRPX Acc No: N02-040000

Multiple function light device e.g. with night light, flash light function, includes **electro-luminescent** lighting **element**, additional diodes having different brightness, combined with fuel powered lighting element

Patent Assignee: CHIEN T (CHIE-I)

Inventor: CHIEN T

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 6280053	B1	20010828	US 98158503	A	19980923	200207 B

Priority Applications (No Type Date): US 98158503 A 19980923

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 6280053	B1	12		F21S-009/00	

Abstract (Basic): US 6280053 B1

Abstract (Basic):

NOVELTY - An **electro-luminescent** lighting **element** (88) and **light emitting** diodes (8) having different brightness for providing different lighting functions, are provided by a DC source. A light element (89) powered by burning of fuel (90) is also provided.

USE - For use as flash light.

ADVANTAGE - A signal device provides different lighting functions.

DESCRIPTION OF DRAWING(S) - The figure shows an isometric view of non-electrically **powered** lighting and **electro-luminescent** night light combination.

**Light emitting diode** (8)

**Electro-luminescent** lighting **element** (88)

**Light element** (89)

**Fuel** (90)

pp; 12 DwgNo 12/12

57/3,AB/3 (Item 3 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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012071719

WPI Acc No: 1998-488630/199842

XRPX Acc No: N98-382126

Goggles type optical stimulus apparatus for brain wave induction apparatus - has **light emitting** **element** whose **luminous intensity** or emission colour are varied periodically

Patent Assignee: SANYO ELECTRIC CO LTD (SAOL )

Number of Countries: 001 Number of Patents: 002

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
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JP 10211285	A	19980811	JP 9715072	A	19970129	199842	B
JP 3505336	B2	20040308	JP 9715072	A	19970129	200418	

Priority Applications (No Type Date): JP 9715072 A 19970129

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
JP 10211285	A	4	A61M-021/02	
JP 3505336	B2	4	A61M-021/02	Previous Publ. patent JP 10211285

Abstract (Basic): JP 10211285 A

The apparatus (1) consists of a light emitting element (3) such as organic EL element. The light emitting element gives an optical stimulus to the vision for a constant period. The intensity or emission colour of the light emitting element are varied periodically.

ADVANTAGE - Helps in induction of desired brain waves such as alpha wave.

Dwg.1/6

57/3,AB/4 (Item 4 from file: 350)

DIALOG(R) File 350:Derwent WPIX

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009944885

WPI Acc No: 1994-212598/199426

XRAM Acc No: C94-097515

XRPX Acc No: N94-167465

Electroluminescence element - provides reduced power consumption, improving efficiency of display device with many radiation beams

Patent Assignee: MITSUBISHI RAYON CO LTD (MITR )

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
JP 6151061	A	19940531	JP 92295789	A	19921105	199426 B

Priority Applications (No Type Date): JP 92295789 A 19921105

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
JP 6151061	A	4	H05B-033/22	

Abstract (Basic): JP 6151061 A

The device consists of luminescence layer (4) which emits light in the presence of electric field. Electrode layer (2) is arranged on either side of the luminescence layer. The electroluminescent element is furnished with luminescence layer made up of the same material as the element, so that it forms a continuous element. The propagation of light from luminescent layer is scattered, dispersed by the particles and power consumption is reduced.

ADVANTAGE - Reduced power consumption. Efficient luminescent light source for display device is obtained.

Dwg.1/4

57/3,AB/5 (Item 5 from file: 350)

DIALOG(R) File 350:Derwent WPIX

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008506531

WPI Acc No: 1991-010615/199102

XRPX Acc No: N91-008265

Power supply for **luminous** hands of timepiece - has rotary transformer between minute and second hands to receive mixed signal from brush conductor

Patent Assignee: SEIKOSHA KK (SUWB )

Inventor: WATANABE I

Number of Countries: 004 Number of Patents: 006

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
GB 2233478	A	19910109	GB 9013842	A	19900621	199102	B
DE 4019985	A	19910117	DE 4019985	A	19900622	199104	
US 4993005	A	19910212	US 90541562	A	19900621	199109	
DE 4019985	C	19910606				199123	
GB 2233478	B	19930519	GB 9013842	A	19900621	199320	
KR 9404395	B1	19940525	KR 909483	A	19900626	199610	

Priority Applications (No Type Date): JP 89163175 A 19890626

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
GB 2233478	B		G04B-019/30	
KR 9404395	B1		G04C-010/00	

Abstract (Basic): GB 2233478 A

The timepiece having **luminous** hands (10,20,30) comprises drive signal generator (S) for generating a mixed signal (S3). The mixed signal includes a high and a low frequency signal (S1,S2). An hour hand brush conductor device (14) is connected to an hour hand (10) and arranged for receiving the mixed signal. An hour hand filter (15) is responsive to the mixed signal when supplied to the hour hand brush conductor device for transmitting the low frequency signal for driving an **electroluminescent element** (EL1) of the hour hand.

A minute hand brush conductor device (24) is provided between the hour hand and a minute hand (20) so as to receive the mixed signal from the hour hand brush conductor device. A minute hand filter (25) is responsive to the mixed signal when supplied to the minute hand brush conductor device for transmitting the low frequency signal for driving an **electroluminescent element** (EL2) of the minute hand. A rotary transformer (34) is further provided between the minute and the second hand (30) so as to receive the mixed signal from the minute hand brush conductor device for driving a **luminous** element (L1,EL3) of the second hand.

ADVANTAGE - Has power supply which allows hour, a minute, and second hands to constantly emit light without shortening life time of light emitting elements. (18pp)

Dwg.No.1/5

Abstract (Equivalent): GB 2233478 B

A timepiece having **luminous** hands and comprising: drive signal generating means for generating a mixed signal, the mixed signal including a high frequency signal and a low frequency signal, an hour hand brush conductor device connected to an hour hand and arranged for receiving the mixed signal, an hour hand filter responsive to the mixed signal when supplied to the hour hand brush conductor device for transmitting the low frequency signal for driving a **luminous** element of the hour hand, a minute hand brush conductor device provided between the hour hand and a minute hand so as to receive the mixed signal from the hour hand brush conductor device, a minute hand filter responsive to the mixed signal when supplied to the minute hand brush conductor device for transmitting the low frequency signal for driving a **luminous** element of the minute hand, and a rotary transformer

provided between the minute hand and a second hand so as to receive the mixed signal from the minute hand brush conductor device for driving a luminous element of a second hand.

Dwg.1/1

Abstract (Equivalent): US 4993005 A

An hour and a minute hand have electro-luminescence elements and a second hand has a light-emitting diode. The power supply system comprises a drive signal generator for producing a mixed signal consisting of a HF signal and a LF signal. An hour hand brush conductor between a fixed member and the hour hand receives the mixed signal. An hour hand filter passes only the LF signal and sends it to the ~~electroluminescence~~ element of the hour hand. A minute hand brush conductor device placed between the hour hand and the minute hand receives the mixed signal from the hour hand brush conductor device. A minute hand filter passes only the LF signal of the mixed signal and sends the LF signal to the ~~electroluminescence~~ element of the minute hand.

A rotary transformer between the minute hand and the second hand transfers the mixed signal from the minute hand brush conductor device to the light-emitting diode of the second hand. When the second hand alternatively has an electro-luminescence element, a converter is provided to convert the HF signal to a LF signal and send this LF signal to the electro-luminescence element of the second hand.

USE - Power supply system for luminous hands of timing device. (9pp)

57/3,AB/6 (Item 6 from file: 350)

DIALOG(R) File 350:Derwent WPIX

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008198062

WPI Acc No: 1990-085063/199012

**Electroluminescent elements** used as display and back-lighting to LCD - reduces switching current through inverter and recovers power from inductor to increase power efficiency and brightness

Patent Assignee: DAIICHI CO LTD (DAIC-N); IKEDA T (IKED-I); NIPPON BEAM ELECTRONICS CO LTD (NIBE-N); NIHON BEAM ELTRN CO LTD (NIBE-N); DAIICHI KOGYO SEIYAKU CO LTD (DAII )

Inventor: IKEDA T; KUROIWA A; SUGA T

Number of Countries: 009 Number of Patents: 006

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
EP 359245	A	19900321	EP 89116980	A	19890913	199012 B
AU 8941279	A	19900322				199032
JP 2256191	A	19901016	JP 8955534	A	19890308	199047
US 5027040	A	19910625	US 89406237	A	19890912	199128
EP 359245	B1	19960612	EP 89116980	A	19890913	199628
DE 68926647	E	19960718	DE 626647**	A	19890913	199634
			EP 89116980	A	19890913	

Priority Applications (No Type Date): JP 89U30614 U 19890317; JP 88231362 A 19880914; JP 8955534 A 19890308; JP 89U30613 U 19890317

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

EP 359245 A E 30

Designated States (Regional): BE DE ES FR IT NL

EP 359245 B1 E 34 H05B-033/08

Designated States (Regional): BE DE ES FR IT NL

Abstract (Basic): EP 359245 A

**Electroluminescent (EL) elements** are used in displays and as backlighting for liquid crystal displays. A power supply circuit has a DC power supply with an inverter connected across the power supply to produce an AC voltage output. **electroluminescent display** is connected to output of the inverter, with an inductor connected between the inverter and **EL element** such that AC voltage is applied from inverter through the inductor to the **EL element** to emit light.

An array of elements have a bipolar capacitor connected across the **EL element**. Power is recovered by an inverse current flow from charge stored in the inverter and this also reduces current during switching.

ADVANTAGE - has improved power supply saving with increased luminescence.

Dwg.7/23

Abstract (Equivalent): EP 359245 B

An EL operating power supply circuit comprising a DC power supply (+E, -E), an inverter (T+1, T+2) connected across the power supply for producing an AC voltage at an output thereof, **electroluminescent (EL) means** connected to the output of the inverter, and an inductor (L) inserted between the inverter and the **electroluminescent means** wherein the AC voltage is applied from the inverter through the inductor to the **electroluminescent means** to emit light, characterised in that the inverter (Tr1, Tr2) receives a switching signal wherein the frequency and/or pulse duration duty ratio of the switching signal is/are variable.

(Dwg.1/23

Abstract (Equivalent): US 5027040 A

The power supply circuit for operating an **electroluminescent (EL) element** comprises a DC power supply, an inverter connected across the power supply, and the **EL element** connected to the inverter. An inductor is inserted between the inverter and the **EL element** wherein an AC voltage is applied from the inverter through the inductor to the **EL element** to emit light.

Another EL operating circuit includes a DC power supply, an inverter, a transformer, and a bipolar capacitor connected in this order and an AC power output on a secondary winding of the transformer is applied to an **EL element** to generate light.

ADVANTAGE - Both the circuits enables a noticeable luminance increase and power saving. (33pp)

57/3,AB/7 (Item 1 from file: 347)  
DIALOG(R)File 347:JAPIO  
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07759220

LUMINESCENT COMPOSITION

PUB. NO.: 2003-253128 [JP 2003253128 A]  
PUBLISHED: September 10, 2003 (20030910)  
INVENTOR(s): SAKAKIBARA MITSUHIKO  
ERIYAMA YUUICHI  
YASUDA HIROYUKI  
APPLICANT(s): JSR CORP  
APPL. NO.: 2002-052608 [JP 200252608]

FILED: February 28, 2002 (20020228)

ABSTRACT

PROBLEM TO BE SOLVED: To provide an organic luminescent composition which can give an **electroluminescent element** capable of emitting a blue light, having high **luminous intensity** and **luminous efficiency**, and excellent in durability, and which can easily form an organic material layer by a wet process.

SOLUTION: The **luminescent** composition contains a specified iridium complex compound and a polymeric substance having hole transfer capability. It is desirable that the polymeric substance having hole transfer capability comprises a copolymer consisting of 50-99 mol% of structural units derived from a hole transfer monomer and 1-50 mol% of structural units derived from an electron transfer monomer, or it comprises a polymer composition consisting of a hole transfer polymer obtained by polymerizing a hole transfer monomer, and an electron transfer polymer obtained by polymerizing an electron transfer monomer at a molar ratio, in terms of monomers, of the hole transfer polymer to the electron transfer polymer of (50:50) to (99:1).

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07637765

SELF LIGHT EMITTING TYPE DISPLAY.DEVICE.

PUB. NO.: 2003-131619 [JP 2003131619 A]  
PUBLISHED: May 09, 2003 (20030509)  
INVENTOR(s): HANARI ATSUSHI  
APPLICANT(s): TOSHIBA CORP  
APPL. NO.: 2001-328058 [JP 2001328058]  
FILED: October 25, 2001 (20011025)

ABSTRACT

PROBLEM TO BE SOLVED: To adjust **luminance** and chromaticity regardless of gradation control.

SOLUTION: The device is provided with a plurality of display pixels PX which constitute of a display screen, a plurality of scanning lines Y which are arranged along the rows of the pixels PX, a plurality signal lines X which are arranged along the columns of a plurality of the display elements and an **EL** power supply 14 which supplies a power supply voltage to the pixels PX. Each pixel PX includes an organic **EL** element 16 which emits light in either one of red, green and blue light emitting colors, a pixel switch 18 which takes in video signals from the corresponding signal line X responding to the scanning signals from the corresponding line Y and a driving element 17 which supplies a driving current corresponding to the video signals from the switch 18 and is connected between the element 16 and the power supply 14. Each element 16 is also connected to the **power** supply 14 via luminance adjusting switches 20R, 20G and 20B which are made independent for every **light emitting** color.

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57/3,AB/9 (Item 3 from file: 347)  
DIALOG(R)File 347:JAPIO  
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07598337  
**ELECTROLUMINESCENT (EL) DISPLAY UNIT**

PUB. NO.: 2003-092183 [JP 2003092183 A]  
PUBLISHED: March 28, 2003 (20030328)  
INVENTOR(s): ISHIZUKA SHINICHI  
APPLICANT(s): PIONEER ELECTRONIC CORP  
APPL. NO.: 2001-281714 [JP 2001281714]  
FILED: September 17, 2001 (20010917)

#### ABSTRACT

PROBLEM TO BE SOLVED: To provide an EL display unit capable of realizing suitable image display corresponding to an input image signal with a simple structure.

SOLUTION: N luminescence driving transistors for feeding luminescence driving currents to N electroluminescent elements have each such channel width that a current ratio of the luminescence driving current generated by them becomes a value for making N electroluminescent elements emit light at a desired luminescence intensity.

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07588126  
**ORGANIC ELECTROLUMINESCENT ELEMENT AND NOVEL THIOPHENE**

PUB. NO.: 2003-081969 [JP 2003081969 A]  
PUBLISHED: March 19, 2003 (20030319)  
INVENTOR(s): ISHIDA TSUTOMU  
SHIMAMURA TAKEHIKO  
TANABE YOSHIMITSU  
TOTANI YOSHIYUKI  
NAKATSUKA MASAKATSU  
APPLICANT(s): MITSUI CHEMICALS INC  
APPL. NO.: 2002-147629 [JP 2002147629]  
FILED: May 22, 2002 (20020522)  
PRIORITY: 2001-162586 [JP 2001162586], JP (Japan), May 30, 2001  
(20010530)  
2001-203918 [JP 2001203918], JP (Japan), July 04, 2001  
(20010704)

#### ABSTRACT

PROBLEM TO BE SOLVED: To provide an organic electroluminescent element that emits light of high intensity with excellent luminous efficiency.

SOLUTION: The organic electroluminescent element has at least one layer including at least one of the compound represented by general formula (1) [wherein R1-R3 are each H, an alkyl, an aryl or an aralkyl; Y is H or a group represented by formula (a) (wherein R4-R6 are each H, an

alkyl, an aryl or an aralkyl); Z1 and Z2 are each H, a halogen, an alkyl, an alkoxy, substituted or unsubstituted amino, an aryl or aralkyl] sandwiched between a pair of electrodes.

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57/3,AB/11 (Item 5 from file: 347)  
DIALOG(R)File 347:JAPIO  
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074'56161  
**ORGANIC ELECTROLUMINESCENT ELEMENT, LIGHT EMITTING SOURCE, LIGHTING DEVICE, DISPLAY DEVICE AND LIGHT-EMISSION METHOD**

PUB. NO.: 2002-324676 [JP 2002324676 A]  
PUBLISHED: November 08, 2002 (20021108)  
INVENTOR(s): SUZURISATO YOSHIYUKI  
              GENDA KAZUO  
              OSHIYAMA TOMOHIRO  
              UEDA NORIKO  
              KITA HIROSHI  
APPLICANT(s): KONICA CORP  
APPL. NO.: 2001-129284 [JP 2001129284]  
FILED: April 26, 2001 (20010426)

#### ABSTRACT

PROBLEM TO BE SOLVED: To provide an organic **EL element** with maximum light-emitting wavelength of not more than 415 nm of high luminous efficiency which saves power, emits sheet light and can be used for manufacturing a flexible device, as well as a light emitting source, a lighting device, a display device and a light-emitting method using the organic **EL element**.

SOLUTION: With the organic **EL element** having a pair of electrodes and an organic compound thin film pinched by the pair of the electrodes, the organic compound thin film is provided with a light emitting layer and an adjacent layer adjacent to the light emitting layer, with fluorescence maximum wavelength of each of light emitting material constituting the light emitting layer and an adjacent layer material constituting the adjacent layer of not more than 415 nm.

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57/3,AB/12 (Item 6 from file: 347)  
DIALOG(R)File 347:JAPIO  
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07411677  
**ORGANIC EL ELEMENT**

PUB. NO.: 2002-280187 [JP 2002280187 A]  
PUBLISHED: September 27, 2002 (20020927)  
INVENTOR(s): MORII KATSUYUKI  
              UCHIDA MASAHIRO  
APPLICANT(s): SEIKO EPSON CORP

APPL. NO.: 2001-076041 [JP 200176041]  
FILED: March 16, 2001 (20010316)

ABSTRACT

PROBLEM TO BE SOLVED: To provide required luminous intensity when emitting light and high transparency when emitting no light, in an organic EL element wherein a luminescent part is partitioned by an insulating layer.

SOLUTION: When the thickness of the insulating layer 3 is set at 1500 &angst;, a negative electrode 5 is formed so as to have a double layer structure comprising a 120 &angst; thick thin film of calcium and a 20 &angst; thick thin film of gold.

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57/3,AB/13 (Item 7 from file: 347)

DIALOG(R)File 347:JAPIO  
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07241906

ORGANIC ELECTROLUMINESCENT ELEMENT AND FORMATION METHOD OF ELECTROLUMINESCENCE ELEMENT METAL COMPLEX

PUB. NO.: 2002-110357 [JP 2002110357 A]  
PUBLISHED: April 12, 2002 (20020412)  
INVENTOR(s): KITA HIROSHI  
MATSUURA MITSUYOSHI  
SUZURISATO YOSHIYUKI  
APPLICANT(s): KONICA CORP  
APPL. NO.: 2000-298878 [JP 2000298878]  
FILED: September 29, 2000 (20000929)

ABSTRACT

PROBLEM TO BE SOLVED: To provide an organic electroluminescent element that has a high luminous intensity and a long life of luminance and a new method of forming a metal complex that is useful as an organic electroluminescent element material in the organic electroluminescent element.

SOLUTION: In the organic electroluminescent element which interposes an organic layer made of an organic compound film of a single or plural layers between the two mutually opposing electrodes, and which contains a ligand that is capable of forming a metal ion and complex in at least one layer of the organic compound layer and which also contains a metal source that emits metal ions in any place between the two electrodes, a metal complex that is newly formed by the ligand and the metal ions emitted from the metal source at the time of forming the element or after forming the element, emits light by the electric field.

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57/3,AB/14 (Item 8 from file: 347)  
DIALOG(R)File 347:JAPIO  
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06125912

LUMINOUS MATERIAL FOR ORGANIC ELECTROLUMINESCENT ELEMENT

AND ORGANIC ELECTROLUMINESCENT ELEMENT USING IT

PUB. NO.: 11-067449 [JP 11067449 A]

PUBLISHED: March 09, 1999 (19990309)

INVENTOR(s): ENOKIDA TOSHI  
OKUTSU SATOSHI  
ONIKUBO SHIYUNICHI  
MAKI SHINICHIRO  
TAMANO MICHIKO

APPLICANT(s): TOYO INK MFG CO LTD

APPL. NO.: 09-216135 [JP 97216135]

FILED: August 11, 1997 (19970811)

ABSTRACT

PROBLEM TO BE SOLVED: To provide an organic **electroluminescent element** that can emit light from blue to red, has high luminous intensity and can emit light for a long time by using a gallium complex as its luminous material.

SOLUTION: The compound used for a material for this organic **electroluminescent element** is expressed by formula. In the formula, each of Q1 and Q2 is a ligand independent of each other having a particular structure. L designates such as a substituted or unsubstituted alkyl group, a substituted or unsubstituted cycloalkyl group, a substituted or unsubstituted aryl group, a substituted or unsubstituted heterocyclic group or the like. When this gallium complex compound is used for an organic layer of an organic **electroluminescent element** and, in particular, this compound is combined with a suitable doping material as a host material, it shows high luminous efficiency throughout a wide luminous range from blue to red depending on the fluorescence wavelength of the doping material. In addition, most of compounds of this type have a melting point of 300°C or more so that they can be well suited to make an element having a long life.

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57/3, AB/15 (Item 9 from file: 347)

DIALOG(R)File 347:JAPIO

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04883781

METHOD FOR DRIVING ELECTROLUMINESCENT ELEMENT

PUB. NO.: 07-176381 [JP 7176381 A]

PUBLISHED: July 14, 1995 (19950714)

INVENTOR(s): EGUCHI TAKESHI  
KAWADA HARUNORI  
NISHIMURA YUKIO

APPLICANT(s): CANON INC [000100] (A Japanese Company or Corporation), JP  
(Japan)

APPL. NO.: 06-332354 [JP 94332354]

FILED: December 14, 1994 (19941214)

ABSTRACT

PURPOSE: To provide a method for driving an **electroluminescent element** which provides sufficiently high brightness even when driven at low voltage, is inexpensive and easy to manufacture by combining specific materials into the specific constitution of a two-layer structural phosphor layer sandwiched between a transparent electrode and a back electrode.

**CONSTITUTION:** The first luminescent layer 4 of a two-layer structural phosphor layer 2 faces a transparent electrode layer 1 and comprises a monomolecular film or its built-up film made of at least one kind of electroluminescent organic compound of electron acceptability relative to a second phosphor layer 5. The phosphor layer 5 faces a back electrode layer 3 and comprises a built-up film made using resistance heating deposition or CVD method from at least one kind of electroluminescent organic compound of electron releasability relative to the phosphor layer 4. A voltage of 10V or less is applied to the electrode films 1 and 3 to cause the phosphor layer 2 to emit light. Luminous intensity and luminous color can be varied and longevity enhanced by varying the difference in electronegativity between the phosphor layers 4 and 5.

57/3,AB/16 (Item 10 from file: 347)

DIALOG(R)File 347:JAPIO

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04732956

#### MANUFACTURE OF DISPERSION TYPE ELECTROLUMINESCENT ELEMENT

PUB. NO.: 06-203956 [JP 6203956 A]

PUBLISHED: July 22, 1994 (19940722)

INVENTOR(s): SATO NAKASHI

APPLICANT(s): KOBAYASHI SOUJI [000000] (An Individual), JP (Japan)  
ERITSUKUSU KK [000000] (A Japanese Company or Corporation),  
JP (Japan)

APPL. NO.: 03-181087 [JP 91181087]

FILED: July 22, 1991. (19910722)

#### ABSTRACT

**PURPOSE:** To provide a dispersion type electroluminescent element having a long life and small power consumption even when a large luminance gradient is given thereto by providing an optional luminance gradient in a light emitting part at segment and pattern emission.

**CONSTITUTION:** In a dispersion type electroluminescent element (EL) consisting of a moisture-proof layer 1, a water supply layer 2, a transparent electrode layer 3, a light emitting layer 4, a back plate layer 5, and a reflecting insulating layer 6, an optional luminance gradient is provided on a light emitting part at segment and pattern emission. Thus, the luminance gradient can be given without shortening the life nor increasing the power consumption. The optional luminance gradient is preferably provided on the light emitting part by etching or coating the electrode 3 or the electrode 5 to give a field strength difference between both electrodes.

57/3,AB/17 (Item 11 from file: 347)

DIALOG(R)File 347:JAPIO

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03668192

#### EL LIGHT EMITTING ELEMENT

PUB. NO.: 04-033292 [JP 4033292 A]

PUBLISHED: February 04, 1992 (19920204)

INVENTOR(s): YOSHIDA TOSHIAKI  
ICHISE MIKIO  
TAKAHASHI HIDEYUKI  
YAMAZAKI SHIGERU  
APPLICANT(s): IWASAKI ELECTRIC CO LTD [000019] (A Japanese Company or Corporation), JP (Japan)  
APPL. NO.: 02-137073 [JP 90137073]  
FILED: May 29, 1990 (19900529)  
JOURNAL: Section: E, Section No. 1202, Vol. 16, No. 204, Pg. 79, May 15, 1992 (19920515)

ABSTRACT

PURPOSE: To secure luminous efficiency over the life period and improve the moisture-proof and water-proof characteristics by using a polymerized film made of polyolefin resin and vinylidene chloride resin for a moisture-proof film.

CONSTITUTION: A moisture-proof film 6 and a moisture-proof film 7 are sealed by thermal pressure welding from the above and under a luminous section 5 laminated with a luminous layer 3 and a transparent electrode 4 via an insulating layer 2 on a back electrode 1 to form this element, the moisture-proof film 7 is made of nylon, and the moisture-proof film 6 is made of a polymer of polyolefin resin and vinylidene chloride resin. Since the polymerized film 6 made of inexpensive polyolefin resin and vinylidene chloride resin is used in place of the conventional moisture-proof film made of fluororesin, the blackening of the luminous face is reduced over the life period, the reduction of intensity is small, the luminous characteristic is not reduced, and this element can be manufactured at a low cost as compared with the conventional one.

57/3,AB/18 (Item 12 from file: 347)  
DIALOG(R)File 347:JAPIO  
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03594890  
ELECTROLUMINESCENCE (EL) LIGHT EMITTING ELEMENT

PUB. NO.: 03-257790 [JP 3257790 A]  
PUBLISHED: November 18, 1991 (19911118)  
INVENTOR(s): MATSUOKA KATSUHIRO  
KASAI SHIRO  
MORIGUCHI TOSHIO  
HISAZUMI YUKINORI  
APPLICANT(s): NICHIA CHEM IND LTD [424878] (A Japanese Company or Corporation), JP (Japan)  
APPL. NO.: 02-056070 [JP 9056070]  
FILED: March 06, 1990 (19900306)  
JOURNAL: Section: E, Section No. 1166, Vol. 16, No. 59, Pg. 108, February 14, 1992 (19920214)

ABSTRACT

PURPOSE: To obtain an EL light emitting element with an excellent luminous intensity characteristic and a long durability characteristic by employing a specific ZnS : Cu, Br phosphor.

CONSTITUTION: An EL light emitting element is made of a pair of electrode layers 3, 4 arranged oppositely to each other and

holding a light emitting layer 1 and an insulating layer 2 therebetween, moisture-proof films 5, 6 for cutting off outside air, and moisture-proof covering films 7, 8 for airtightly enclosing the whole body. Composition of a phosphor of the light emitting layer 1 is expressed by a general formula ZnS : Cu, Br and a Cu content to zinc sulfide is set within a range of  $1 \times 10^{-4} \leq \text{Cu/ZnS} \leq 50 \times 10^{-4}$ , a content ratio of Cu or Br within a range of  $0.6 \leq \text{Cu/Br} \leq 1.5$ , and an average grain diameter of the phosphor grains is set within 3-20 $\mu\text{m}$ . Accordingly, an EL light emitting element with high luminous intensity and long durability can be obtained.

03/25/2004

10/085,607

25mar04 11:47:39 User267149 Session D1308.1

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File 315:ChemEng & Biotec Abs 1970-2004/Feb  
(c) 2004 DECHEMA  
File 350:Derwent WPIX 1963-2004/UD,UM &UP=200419  
(c) 2004 Thomson Derwent  
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Enter HELP NEWS 331 for details.  
File 347:JAPIO Nov 1976-2003/Nov(Updated 040308)  
(c) 2004 JPO & JAPIO ..  
\*File 347: JAPIO data problems with year 2000 records are now fixed.  
Alerts have been run. See HELP NEWS 347 for details.  
File 344:Chinese Patents Abs Aug 1985-2004/Mar  
(c) 2004 European Patent Office  
File 371:French Patents 1961-2002/BOP1 200209  
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\*File 371: This file is not currently updating. The last update is 200209.

Set	Items	Description
S1	38940	AU=(HAYASHI, K? OR HAYASHI K?)
S2	2072	AU=(FUKUCHI, T? OR FUKUCHI T?)
S3	2279	AU=(TSUBOI, S? OR TSUBOI S?)
S4	10	S1 AND S2
S5	9	S4 AND S3
S6	9	RD (unique items)
S7	43268	S1:S3
S8	43258	S7 NOT S4
S9	2605	S8 AND (LIGHT??????()EMIT??????() (DIOD? ? OR DEVICE? ?) - OR LED? ? OR LUMIN?????? OR PHOTOILLUMINAT? OR ILLUMINAT? OR ILLUM? OR ILLUMINE? OR LASER? ? OR PLD OR ELECTROLUMIN?)
S10	25	S9 AND (LIGHT?(3N)EMIT?(1N) (ELEMENT? ? OR LAYER??? OR FILM- ??? OR COAT??? OR MÜLTILÄYER??? OR MULTI()LÄYER???? OR SPACE- R??? OR INTERLAYER???? OR INTER()LAYER???? OR MULTIPLE()LAYER- R? ??))
S11	25	RD (unique items)
S12	0	S11 AND (ELECTRO()LUMINESCEN?(2N)ELEMENT? ? OR EL(2N)ELEME- NT? ? OR ELECTROLUMINESCENT(3N)ELEMENT? ?)
S13	25	S11 AND LIGHT?(3N) (SENSOR OR SENSING OR SENSE OR SENSING OR SWITCH? OR TRANSPAREN? OR EMIT?)
S14	0	S13 AND ((LOWER OR UPPER)(3N) ( (MICRO)(W)(ELECTRONIC? OR C- IRCUIT? ? OR CHIP? ?) OR CHIP? ? OR MICROCIRCUIT? ? OR DIE? ? OR LOGIC(W)CIRCUIT? ? OR WAFER? ? OR MICROELECTRONIC OR DICE - OR ELECTRODE? ?))
S15	25	S13

6/3,AB/1 (Item 1 from file: 350)  
"DIALOG(R) File 350:Derwent WPIX  
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015031363

WPI Acc No: 2003-091880/200308

XRPX Acc No: N03-072815

Light emitting element for display device, has transparent electrode containing mixture, of oxide of indium and tin, having specific structural formula

Patent Assignee: NEC CORP (NIDE )

Inventor: FUJIEDA I; FUKUCHI T; HAYASHI K; TSUBOI S

Number of Countries: 003 Number of Patents: 004

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20020158588	A1	20021031	US 200285902	A	20020227	200308 B
JP 2002252088	A	20020906	JP 200151410	A	20010227	200308
KR 2002070158	A	20020905	KR 200210687	A	20020227	200311
US 6628086	B2	20030930	US 200285902	A	20020227	200367

Priority Applications (No Type Date): JP 200151410 A 20010227

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20020158588	A1		69	G09G-003/10	
JP 2002252088	A		34	H05B-033/26	
KR 2002070158	A			C09K-011/66	
US 6628086	B2			G09G-003/10	

Abstract (Basic): US 20020158588 A1

Abstract (Basic):

NOVELTY - A substrate (11) has transparent electrode (21a) over which light emitting material and upper electrode are formed sequentially. The transparent electrode is made up of mixture, of oxide of indium and tin, having structural formula  $In_{2-x}Sn_xO_3-y$ , where y lies in the range of 0.05 and 0.2.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is included for display device.

USE - For display device (claimed), e.g. organic EL device.

ADVANTAGE - The display device with improved light emission property for long period of time, can be obtained effectively.

DESCRIPTION OF DRAWING(S) - The figure shows a cross-sectional view of the light emitting element.

Substrate (11)

Transparent electrode (21a)

pp: 69 DwgNo 9A/55

6/3,AB/2 (Item 2 from file: 350)

DIALOG(R) File 350:Derwent WPIX

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014916005

WPI Acc No: 2002-736712/200280

XRPX Acc No: N02-580998

Light emitting element for display device, includes optical sensor on upper electrode to detect intensity of emitted light

Patent Assignee: NEC CORP (NIDE )

Inventor: FUKUCHI T; HAYASHI K; TSUBOI S

Number of Countries: 002 Number of Patents: 002

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
JP 2002260851	A	20020913	JP 200152741	A	20010227	200280 B
US 20030047736	A1	20030313	US 200285607	A	20020227	200321

Priority Applications (No Type Date): JP 200152741 A 20010227

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
JP 2002260851	A	21	H05B-033/08	
US 20030047736	A1		H01L-027/15	***

Abstract (Basic): JP 2002260851 A

Abstract (Basic):

**NOVELTY** - The light emitting element (4) has a luminescent material layer (12) between upper and lower electrodes (11,13) formed on a substrate (10). An optical sensor (1) formed on the upper electrode, detects the intensity of light emitted from the light emitting element.

**DETAILED DESCRIPTION** - An INDEPENDENT CLAIM is included for light emission system.

**USE** - E.g. electroluminescent element for display device.

**ADVANTAGE** - Suppresses brightness irregularity and color non-uniformity. Improves optical intensity detection sensitivity by guiding the emitted light to the sensor efficiently.

**DESCRIPTION OF DRAWING(S)** - The figure shows the block diagram of the light emission system.

Optical sensor (1)

Light emitting element (4)

Substrate (10)

Upper and lower electrodes (11,13)

Luminescent material layer (12)

pp; 21 DwgNo 1/16

6/3,AB/3 (Item 3 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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014798615

WPI Acc No: 2002-619321/200266

XRAM Acc No: C02-175071

XRPX Acc No: N02-490206

Organic EL device

Patent Assignee: NEC CORP (NIDE )

Inventor: FUKUCHI T; HAYASHI K; ODA A; TSUBOI S

Number of Countries: 004 Number of Patents: 002

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
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WO 200263929	A1	20020815	WO 2002JP880*	A	20020204	200266 B
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JP 2002237390	A	20020823	JP 200131813	A	20010208	200271
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Priority Applications (No Type Date): JP 200131813 A 20010208

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
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WO 200263929	A1 J	96	H05B-033/28	
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Designated States (National): CN KR US

JP 2002237390	A	27	H05B-033/26	
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Abstract (Basic): WO 200263929 A1

Abstract (Basic):

**NOVELTY** - Organic EL device having a light emitting element comprising a first electrode (2), a second electrode (4) of transparent

15/3,AB/1 (Item 1 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
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015505389

WPI Acc No: 2003-567536/200353  
XRPX Acc No: N03-451205

Organic **electroluminescent** display for electronic instruments, has sealing **layer** to seal **light-emitting** unit and has heat radiation **layer** with thermal conductivity

Patent Assignee: SEIKO EPSON CORP (SHIWA.) . . . . .

Inventor: HAYASHI K

Number of Countries: 004 Number of Patents: 004

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20030085654	A1	20030508	US 2002285542	A	20021101	200353 B
CN 1416006	A	20030507	CN 2002147234	A	20021018	200353
JP 2003142255	A	20030516	JP 2001338045	A	20011102	200353
KR 2003036089	A	20030509	KR 200267371	A	20021101	200358

Priority Applications (No Type Date): JP 2001338045 A 20011102

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
US 20030085654	A1	8	H05B-033/00	
CN 1416006	A		G02F-001/161	
JP 2003142255	A	7	H05B-033/04	
KR 2003036089	A		H05B-033/04	

Abstract (Basic): US 20030085654 A1

Abstract (Basic): . . . . .

NOVELTY - The apparatus has a **light-emitting** unit (3) and a sealing **layer** (4) to hermetically seal the **light-emitting** unit. The sealing **layer** includes a heat radiation layer with thermal conductivity, a gas barrier, and an insulating layer. The gas barrier layer is made of an inorganic compound and the insulating layer is made of an organic compound.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a manufacturing method of an electro-optical apparatus with a **light-emitting** unit.

USE - Used for electronic apparatus such as an organic electro luminescence apparatus.

ADVANTAGE - The apparatus reduces thickness of the sealing layer while suppressing a thermal effect. The **light-emitting** unit with the sealing **layer** avoids the degradation due to oxygen or moisture without increasing the thickness.

DESCRIPTION OF DRAWING(S) - The drawing shows a sectional view of a **light-emitting** unit on a substrate sealed with a sealing layer.

**Light-emitting** unit. (3) .. . . . .

Sealing layer. (4)

pp; 8 DwgNo 1/2

15/3,AB/2 (Item 2 from file: 350)

DIALOG(R)File 350:Derwent WPIX  
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015114148

WPI Acc No: 2003-174668/200317  
XRPX Acc No: N03-137559

**Light emitting unit for active matrix EL display device,  
includes auxiliary electrode which is formed on light  
emitting layer through insulation layer**

Patent Assignee: NEC CORP (NIDE ); HAYASHI K (HAYA-I); ODA A (ODAA-I)

Inventor: HAYASHI K; ODA A

Number of Countries: 003 Number of Patents: 003

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20020167280	A1	20021114	US 2002141649	A	20020509	200317 B
JP 2002343578	A	20021129	JP 2001139987	A	20010510	200317
CN 1386039	A	'20021218	CN '200211'9711	A	'20020510	200326

Priority Applications (No Type Date): JP 2001139987 A 20010510

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20020167280	A1	37		G09G-003/10	
JP 2002343578	A	23		H05B-033/26	
CN 1386039	A			H05B-033/12	

Abstract (Basic): US 20020167280 A1

Abstract (Basic):

NOVELTY - An intermediate light emitting layer

(1) is interposed with the cathode (3a) and anode (5a) such that the cathode partially faces the anode through the light emitting layer. An auxiliary electrode (4a) is formed on the light emitting layer through an insulation layer (2).

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for the following:

- (1) Light emitting device;
- (2) Light emitting display; and
- (3) Active matrix display.

USE - For active matrix display device (claimed), EL display device.

ADVANTAGE - The light emitting layer of the cathode improves the reliability and luminance of the light emitting unit.

DESCRIPTION OF DRAWING(S) - The figure shows the isometric view of the light emitting unit.

Light emitting material layer (1)

Insulation layer (2)

Cathode(34a) Auxiliary electrode (3a)

Anode (5a)

pp; 37 DwgNo 1/38

15/3,AB/3 (Item 3 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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012643723

WPI Acc No: 1999-449828/199938

XRPX Acc No: N99-336310

Hole transportation layer of organic light emitting element - has diamond film with boron concentration in predetermined range

Patent Assignee: KOBE STEEL LTD (KOBM ); KOBE SEIKO SHO KK (KOBM )

Inventor: HAMAGUCHI M; HAYASHI K; KOBASHI K; TACHIBANA T; YOKOTA Y;

YOSHINO K

Number of Countries: 002 Number of Patents: 002

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
JP 11185964	A	19990709	JP 97349537	A	19971218	199938 B
US 6198218	B1	20010306	US 98215297	A	19981218	200115

Priority Applications (No Type Date): JP 97349537 A 19971218

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
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JP 11185964	A	8	H05B-033/22	
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US 6198218	B1		H01J-001/62	
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Abstract (Basic): JP 11185964 A .. . . . . NOVELTY - The hole transportation layer has a diamond film with boron concentration of 1.0 multiply 1019-1.0 multiply 1021 divided by cm<sup>3</sup>.

USE - For organic light emitting element used in back light for liquid crystal displays, in flat surface illumination light source for flat surface panel display.

ADVANTAGE - Obtains high luminous efficiency with high stability due to the use of boron in diamond film. Mixing of impurities in diamond film is prevented, hence diamond film of low resistance is obtained. DESCRIPTION OF DRAWING(S) - The figure shows graph drawn between boron concentration in diamond film and light intensity of organic light emitting element.

Dwg. 3/4

15/3, AB/4 (Item 1 from file: 347)

DIALOG(R) File 347: JAPIO

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07621952

## LIGHT EMITTING DEVICE AND COMMUNICATION SYSTEM

PUB. NO.: 2003-115803 [JP 2003115803 A]

PUBLISHED: April 18, 2003 (20030418)

INVENTOR(s): ODA ATSUSHI

HAYASHI KAZUHIKO

AZUMAGUCHI TATSU

APPLICANT(s): NEC CORP

APPL. NO.: 2001-311659 [JP 2001311659]

FILED: October 09, 2001 (20011009)

### ABSTRACT

PROBLEM TO BE SOLVED: To provide a light emitting device and a communication system provided with the same, in which a communication velocity is accelerated in a light emitting device to be used for communication using light, and to provide a communication system, in which information recorded in an information storage part (storage means) installed on an identification target can be rewritten without trouble.

SOLUTION: In the light emitting device provided with a light emitting body 120 capable of transmitting signal light composed of light modulated on the basis of inputted data, the light emitting body 120 is an electroluminescence element. Besides, the light emitting body 120 emits non-signal light composed of non-modulated light and signal light in different periods and the non-signal light functions as illumination as well. Further, the signal light functions as illumination as well.

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15/3,AB/5 (Item 2 from file: 347)  
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07511851

DISPLAY ELEMENT AND IMAGE DISPLAY DEVICE

PUB. NO.: 2003-005674 [JP 2003005674 A]  
PUBLISHED: January 08, 2003 (20030108)  
INVENTOR(s): HAYASHI KUNIHIKO  
USUI HAYAO  
APPLICANT(s): SONY CORP  
APPL. NO.: 2001-183906 [JP 2001183906]  
FILED: June 18, 2001 (20010618)

ABSTRACT

PROBLEM TO BE SOLVED: To suppress the deterioration of a pixel or the unevenness of brightness in a LED display.

SOLUTION: A display element is provided with a plurality of light emitting elements which emit light in the same color. An image display device is formed of the display elements arranged in a matrix-shape. A plurality of the light emitting elements are embedded in an insulation material so as to be display elements. The display element is provided with a plurality of light emitting elements which emit light in respective colors, when a red color light emitting element, a green color emitting element, and a blue color emitting element are equipped therewith. In a display element provided with a plurality of light emitting elements which emit light in the same color, when one light emitting element has a defect and does not afford light, the deterioration of a pixel is not caused because the rest of the light emitting elements emit light.

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15/3,AB/6 (Item 3 from file: 347)  
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07499769

RESIN FORMING ELEMENT, IMAGE DISPLAY, AND ILLUMINATION EQUIPMENT, AND METHOD OF MANUFACTURING THE SAME

PUB. NO.: 2002-368289 [JP 2002368289 A]  
PUBLISHED: December 20, 2002 (20021220)  
INVENTOR(s): OHATA TOYOJI  
IWABUCHI TOSHIAKI  
HAYASHI KUNIHIKO  
OBA HIROSHI  
APPLICANT(s): SONY CORP  
APPL. NO.: 2001-176643 [JP 2001176643]  
FILED: June 12, 2001 (20010612)

ABSTRACT

PROBLEM TO BE SOLVED: To provide a resin formed element which enables

to increase the light extraction efficiency from a light-emitting element and to enlarge angle of visibility, without newly generating a manufacturing cost and a parts cost when manufacturing an image display and illumination equipment, which are formed by arranging resin formed elements, each of which is such that a light-emitting element is coated with a resin, and also to provide an image display and an illumination equipment, and a method of manufacturing the same.

SOLUTION: Unevenness is formed on a light-extracting surface of the resin formed element, and the light extraction efficiency and the expansion of an angle of visibility are increased, by suppressing the total reflection and by light scattering on the light-extracting surface. Since the unevenness can be formed, when releasing the resin formed element from a member for temporary retention, there is no generation of new manufacturing cost or cost for new parts.

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15/3,AB/7 (Item 4 from file: 347)  
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07475060  
**LIGHT-EMITTING BODY, LIGHT-EMITTING ELEMENT  
AND LIGHT- EMITTING DISPLAY DEVICE**

PUB. NO.: 2002-343578 [JP 2002343578 A]  
PUBLISHED: November 29, 2002 <20021129>  
INVENTOR(s): HAYASHI KAZUHIKO  
ODA ATSUSHI  
APPLICANT(s): NEC CORP  
APPL. NO.: 2001-139987 [JP 2001139987]  
FILED: May 10, 2001 (20010510)

**ABSTRACT**

**PROBLEM TO BE SOLVED:** To obtain a light-emitting body, a light-emitting element and a light-emitting display device that are improved in light-emitting life by preventing corrosion as it has become possible to use a material of low corrosion for the cathode material, as a result of increased emission quantity in the luminous material layer or wide range of selection of the luminous layer and the cathode material.

**SOLUTION:** In the light-emitting body, which is made of an anode and a cathode of which a part is installed opposed to each other through a luminous material layer, an auxiliary electrode is formed through an insulating layer on the opposite face to the face opposed to the cathode through the luminous material layer of the anode. In this light-emitting body, a voltage is impressed between the auxiliary electrode and the cathode so that it may be in the same direction as the direction of the voltage that is impressed between the anode and the cathode.

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15/3,AB/8 (Item 5 from file: 347)  
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05748334

LIGHT EMITTING DIODE, DISPLAY UNIT, AND DISPLAY DEVICE

PUB. NO.: 10-031434 [JP 10031434 A]

PUBLISHED: February 03, 1998 (19980203)

INVENTOR(s): KOJIMA HIROYUKI

YAMAZAKI KYOJI

IDE KATSUYUKI

NAKAOKA KENICHI

NAKAJIMA JUNICHI. . . . .

HAYASHI KAZUO

APPLICANT(s): TOSHIBA LIGHTING & TECHNOL CORP [461465] (A Japanese Company or Corporation), JP (Japan)

APPL. NO.: 09-042496 [JP 9742496]

FILED: February 26, 1997 (19970226)

ABSTRACT

PROBLEM TO BE SOLVED: To prevent the deterioration by moisture and UV rays by eliminating the need for cleaning or making cleaning intervals longer, and protecting an enclosure.

SOLUTION: A photocatalyst film 2 is formed on the outside surface of the translucent enclosure 1c of a **light emitting diode**

**element 1.** An inorganic and translucent protective layer 3 is interposed under this photocatalyst layer at need. The photocatalyst may be formed on the outside surface of a glass cap and mounted on the **light emitting diode** or may be formed on the front surface of a unit transparent body disposed in front of the **light emitting diode** in addition to the formation on the **light emitting diode**. The formation of the photocatalyst on the cover of the front surface of a display unit or display device is equally good. The photocatalyst film is activated by receiving the irradiation with the UV rays to decompose the contaminants sticking thereto by an oxidation and reduction effect.

15/3, AB/9 (Item 6 from file: 347)

DIALOG(R)File 347:JAPIO

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04490212

JAPANESE PINBALL GAME @ (3754/24) PACHINKO MACHINE

PUB. NO.: 06-134112 [JP 6134112 A]

PUBLISHED: May 17, 1994 (19940517)

INVENTOR(s): ICHIHARA SHIGERU

HAYASHI KATSUHIKO

TERAMOTO TOMIO

APPLICANT(s): DAIICHI SHOKAI CO LTD [365374] (A Japanese Company or Corporation), JP (Japan)

APPL. NO.: 04-314172 [JP 92314172]

FILED: October 28, 1992 (19921028)

JOURNAL: Section: C, Section No. 1237, Vol. 18, No. 433, Pg. 149, August 12, 1994 (19940812)

ABSTRACT

PURPOSE: To specify a pattern displaying mode with respect to a picture pattern shown by a picture pattern display device.

CONSTITUTION: A picture pattern device 2 having a first upper display body

30A and a first lower display body 30B for variably displaying patterns and middle picture displayed by **light emitting elements** and a second display body 40 which is driven to rotate by a display body driving motor and variably displays plural picture patterns including V and a prize-winning device 3 having a great prize-winning port 4 are installed in a game board 1, and both first display bodies 30A, 30B and a second display body 40 execute opening/closing control of the great prize-winning port 4, based on the result of decision of a combination of specific picture patterns.

15/3,AB/10 (Item 7 from file: 347)  
DIALOG(R)File 347:JAPIO  
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04465732  
PHOTOELECTRIC SENSOR

PUB. NO.: 06-109632 [JP 6109632 A]  
PUBLISHED: April 22, 1994 (19940422)  
INVENTOR(s): OBATA KENJI  
**HAYASHI KOZO**  
OKUYAMA KENJI  
APPLICANT(s): MATSUSHITA ELECTRIC WORKS LTD [000583] (A Japanese Company or Corporation), JP (Japan)  
APPL. NO.: 04-255223 [JP 92255223]  
FILED: September 25, 1992 (19920925)  
JOURNAL: Section: P, Section No. 1772, Vol. 18, No. 384, Pg. 94, July 19, 1994 (19940719)

ABSTRACT

PURPOSE: To provide a correct output value even when a dirt sticks to the inside of a sensor.

CONSTITUTION: A clock circuit 20 and a timer 21 periodically open a gate 22, read a sensor output and store it in a memory 23. When the value stored in the memory 23 exceeds the threshold value of a comparator 24, the output signal of comparator 24 adjusts the resistance value of a volume 25 of an LED driver 16, to continuously suppress the **light-emission** amount from a **light emitting element** 3 which is an infrared ray **light emitting diode(LED)**. So, even if a sensor output increases due to stuck dirt, the **light emission** amount of the **light emitting element** 3 is decreased for stabilized output value at all times.

15/3,AB/11 (Item 8 from file: 347)  
DIALOG(R)File 347:JAPIO  
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04354907  
HOLOGRAPHIC FINDER

PUB. NO.: 05-346607 [JP 5346607 A]  
PUBLISHED: December 27, 1993 (19931227)  
INVENTOR(s): KOBAYASHI KOSEI  
MAEKAWA YUKIO  
**HAYASHI KOTARO**  
HAMAGUCHI KOJI  
YANO MASARU

APPLICANT(s): MINOLTA CAMERA CO LTD [000607] (A Japanese Company or Corporation), JP (Japan)  
APPL. NO.: 04-156340 [JP 92156340]  
FILED: June 16, 1992 (19920616)  
JOURNAL: Section: P, Section No. 1720, Vol. 18, No. 187, Pg. 146,  
March 30, 1994 (19940330)

#### ABSTRACT

PURPOSE: To abate a restriction as for the positions of eyes and to enable the precise visual field of photographing to be confirmed by both eyes.  
CONSTITUTION: Two hologram plates 2a and 2b are arranged on a camera main body 1 so that the information of the hologram image of a visual field frame is recorded, prescribed positional relation between a photographing lens 12 is maintained and they are made to correspond to the positions of both eyes of a photographer. In front of them, light emitting elements 3a and 3c displaying the hologram image by superimposing it on an object by illuminating the plate 2a or 2b according to the distance of the object are provided.

15/3, AB/12 (Item 9 from file: 347)  
DIALOG(R) File 347: JAPIO  
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03920711  
LIGHT COLLIMATOR

PUB. NO.: 04-285811 [JP 4285811 A]  
PUBLISHED: October 09, 1992 (19921009)  
INVENTOR(s): HAYASHI KOJI  
NOMURA YOSHIO  
APPLICANT(s): TOYO COMMUN EQUIP CO LTD [000310] (A Japanese Company or Corporation), JP (Japan)  
APPL. NO.: 03-104983 [JP 91104983]  
FILED: March 14, 1991 (19910314)  
JOURNAL: Section: P, Section No. 1490, Vol. 17, No. 84, Pg. 99,  
February 19, 1993 (19930219)

#### ABSTRACT

PURPOSE: To facilitate accurate regulation of an optical axis and thereby to enable execution of communication with little loss of energy by disposing a visual point on the optical axis of a signal light and by concentrating the energy of the signal light on the optical axis.

CONSTITUTION: A projector 30 is supported movably by a pedestal 31, while a light loss regulating plate 35 and a half mirror 36 are disposed between an ocular part 33 and a delivery lens 34, and an electro-optical conversion circuit 38 is disposed above the half mirror 36. The circuit 38 has a light-emitting element 39 and a light beam L applied from the element 39 to the half mirror 36 is reflected thereby and emitted from the delivery lens 34. The light beam emitted from the lens 34 comes in from the lens 34 and is transmitted through the half mirror 36, and the optical axis thereof is made to coincide with that of a visible light entering the ocular part 33 from outside. In a light receiver 45, likewise, a light loss regulating plate 49 and a half mirror 50 are disposed between an ocular part 47 and a receiving lens 48 and the optical axis of a light beam entering from the receiving lens 48 is made to coincide with that of a visible light entering from outside through the half mirror 50.

15/3,AB/13 (Item 10 from file: 347)  
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03745512

DISPLACEMENT DETECTING APPARATUS

PUB. NO.: 04-110612 [JP 4110612 A]  
PUBLISHED: April 13, 1992 (19920413)  
INVENTOR(s): HAYASHI KOICHI  
SHIBATA SHINJI  
APPLICANT(s): OKUMA MACH WORKS LTD [350858] (A Japanese Company or  
Corporation), JP (Japan)  
APPL. NO.: 02-229114 [JP 90229114]  
FILED: August 30, 1990 (19900830)  
JOURNAL: Section: P, Section No. 1395, Vol. 16, No. 357, Pg. 104, July  
31, 1992 (19920731)

ABSTRACT

PURPOSE: To detect the displacement stably in high resolution with low power consumption by performing amplitude modulation for the amount of light from a light emitting part, converting the amount of the amplitude modulated light into the electric signal, and detecting the displacement.

CONSTITUTION: The light from a light emitting element 1 passes through a collimator lens 2, a main scale 3, and index scale 4 and undergoes amplitude modulation in approximately proportional to the sine wave value and the cosine wave value of a detected displacement (x). A parameter Kp which is stored in an EEPROM 16 beforehand corrects the changing pattern of numerical values S and C corresponding to the change in detected displacement (x) into the sine wave whose phase is shifted by 90 deg. accurately. The parameter Kp is read out into a microprocessor 14, and the operation is performed. Thus, the numerical values S and C are brought more closer to the numerical values which are proportional to the sine wave value and the cosine wave value of the detected displacement (x), and the detecting accuracy is improved. The operation is performed in the microprocessor 14 based on the corrected numerical values S and C. Thus, the detected displacement (x) is converted into the numerical value indicating high resolution and high accuracy.

15/3,AB/14 (Item 11 from file: 347)  
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03590933

DISPLAY ILLUMINATION DEVICE FOR CAMERA

PUB. NO.: 03-253833 [JP 3253833 A]  
PUBLISHED: November 12, 1991 (19911112)  
INVENTOR(s): ISHII NORIYUKI  
CHUSA MASAYUKI  
FUJINO AKIHIKO  
HAYASHI KOTARO  
APPLICANT(s): MINOLTA CAMERA CO LTD [000607] (A Japanese Company or  
Corporation), JP (Japan)  
APPL. NO.: 02-052387 [JP 9052387]  
FILED: March 02, 1990 (19900302)  
JOURNAL: Section: P, Section No. 1310, Vol. 16, No. 56, Pg. 4,

February 12, 1992 (19920212)

ABSTRACT

PURPOSE: To obtain enough space for elements by providing two light sources whose colors are different as the illumination light source of a display part.

CONSTITUTION: On an LED substrate 7, many sets of light emitting elements are provided by setting two LEDs 7A and 7B whose colors are different as a set of light emitting elements. That means, light from the LEDs 7A and 7B does not become the perfect collimated beam of light. However, by arranging a diffusing sheet 6A behind a lens 6B, the light is diffused so that the covering area of the lens 6B of an LCD 5 is uniformly illuminated by the illumination light emitted from two LEDs 7A and 7B as the uniform illumination light. Then, the element 7A is made to emit the light at a flash photographing mode time and the element 7B is made to emit the light at an ordinary photographing mode time. Thus, more than enough space is obtained for the display part in the LCD.

15/3,AB/15 (Item 12 from file: 347)

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03127524

FINDER DISPLAY DEVICE

PUB. NO.: 02-103024 [JP 2103024 A]

PUBLISHED: April 16, 1990 (19900416)

INVENTOR(s): HAYASHI KOTARO

MAEKAWA YUKIO

HATA YOSHIAKI

NEGORO YUMIKO

APPLICANT(s): MINOLTA CAMERA CO LTD [000607] (A Japanese Company or Corporation), JP (Japan)

APPL. NO.: 63-258277 [JP 88258277]

FILED: October 12, 1988 (19881012)

JOURNAL: Section: P, Section No. 1073, Vol. 14, No. 317, Pg. 57, July 09, 1990 (19900709)

ABSTRACT

PURPOSE: To always allow an object image to coincide with the visual field of a focusing display even if object distance is changed by changing the position of an emitting element which lights a hologram plate according to the object distance.

CONSTITUTION: The hologram plate 5 set in a non-TTL type finder system diffracts light from an emitting element 4 arranged outside a finder optical path and performs focusing display in a finder visual field. When the object distance is changed, the light emitting element 4 is moved in the way that the diopter of the focusing display coincides with an object diopter, for example, by a motor, a bimorph, etc., in response to object distance found by a range-finding device 1. Therefore, even if the object distance is changed a photographer can constantly see a focusing display at the same position as an object image position and obtain the finder easy to see.

15/3,AB/16 (Item 13 from file: 347)

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03111632

FINDER DISPLAY DEVICE

PUB. NO.: 02-087132 [JP 2087132 A]  
PUBLISHED: March 28, 1990 (19900328)  
INVENTOR(s): HAYASHI KOTARO  
MAEKAWA YUKIO  
HATA YOSHIAKI  
NEGORO YUMIKO  
APPLICANT(s): MINOLTA CAMERA CO LTD [000607] (A Japanese Company or Corporation), JP (Japan)  
APPL. NO.: 63-238404 [JP 88238404]  
FILED: September 22, 1988 (19880922)  
JOURNAL: Section: P, Section No. 1064, Vol. 14, No. 286, Pg. 153, June 20, 1990 (19900620)

ABSTRACT

PURPOSE: To allow a photographer to readily recognize an automatic focusing spot by using a hologram plate and displaying information on automatic focusing so as to overlap with an erect virtual image of an object that is focused automatically.

CONSTITUTION: Plural **light emitting elements** 2A to 2E selectively **emitting light** to display the automatic focusing position are arranged outside a finder optical path. A hologram plate 3 arranged on the finder optical path diffracts the **light** from the **light emitting elements** and **information on automatic focusing** is displayed to overlap with the erect virtual image of the object that is automatically focused. Therefor, even if the virtual image of the object is formed ahead of the camera, hologram can surface the focused position display in the position where the virtual image is formed. Thus, an image of the object and the focused position display can be observed at the same diopter.

15/3,AB/17 (Item 14 from file: 347)  
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03111631

SELF-TIMER DISPLAY DEVICE FOR CAMERA

PUB. NO.: 02-087131 [JP 2087131 A]  
PUBLISHED: March 28, 1990 (19900328)  
INVENTOR(s): HAYASHI KOTARO  
HATA YOSHIAKI  
MATSUI TORU  
NEGORO YUMIKO  
APPLICANT(s): MINOLTA CAMERA CO LTD [000607] (A Japanese Company or Corporation), JP (Japan)  
APPL. NO.: 63-238405 [JP 88238405]  
FILED: September 22, 1988 (19880922)  
JOURNAL: Section: P, Section No. 1064, Vol. 14, No. 286, Pg. 153, June 20, 1990 (19900620)

ABSTRACT

PURPOSE: To reduce the number of opening windows in front of a camera by

taking advantage of principles of hologram and displaying a self-timer on any of a photometry window, a range-finding window and a finder window so that the display can be viewed from the side of an object.

CONSTITUTION: A hologram plate 2 is arranged on the photometry window in front of the camera, a photometric optical system 3 is arranged behind the hologram plate 2, and a light emitting element 4 irradiating the hologram plate 2 with reference light is arranged outside the optical path of the photometric optical system 3. A beam splitter 11 bisects a laser beam from a laser generator 10, one is used to illuminate the object, and the other is used for reference light interfering with reflected light from the object 12. The reflected light from the object 12 and the interference fringe of the reference light are recorded on a hologram photosensitive material 13, and the hologram plate 2 is obtained. The laser beam is diffracted by the interference fringe recorded on the hologram plate 2, and the transmitted, diffracted light surfaces an erect normal image 12' of the object in its original position. Thus, the number of opening windows in front of the camera can be reduced.

15/3,AB/18 (Item 15 from file: 347)  
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03111629

SPORT FINDER

PUB. NO.: 02-087129 [JP 2087129 A]  
PUBLISHED: March 28, 1990 (19900328)  
INVENTOR(s): HAYASHI KOTARO  
KIMURA KAZUO  
HATA YOSHIAKI  
TOKUMARU SHO  
NEGORO YUMIKO  
APPLICANT(s): MINOLTA CAMERA CO LTD.[000607] (A Japanese Company or Corporation), JP (Japan)  
APPL. NO.: 63-238406 [JP 88238406]  
FILED: September 22, 1988 (19880922)  
JOURNAL: Section: P, Section No. 1064, Vol. 14, No. 286, Pg. 152, June 20, 1990 (19900620)

#### ABSTRACT

PURPOSE: to eliminate the blur of a visual field frame by surfacing the frame in a space closer to an object rather than to a camera main body.  
CONSTITUTION: The sport finder is provided with a hologram plate 2 which is provided outside the camera main body 1 to be folded up and passes light from an object as it is, and a light emitting element 3 which irradiates the hologram plate 2 with reference light, and reproduces at least one of the visual field frame, a range-finding frame and a metering frame in the space closer to the object rather than to the camera main body 1 with the aid of diffracted light from the hologram plate 2. The hologram plate 2 passing the light from the object as it is provided outside the camera main body 1 so as to be folded up and to be attached or detached. The light emitting element 3 irradiates the hologram plate 2 with the reference light to reproduce the visual field frame in the space closer to the object rather than to the camera main body 1 with the aid of the diffracted light from the hologram plate 2. As a result, the visual field frame becomes almost the same as the object in diopter, thereby eliminating the blur of the visual field frame. In addition, since the visual field frame becomes farther from an observer,

the position and magnification relations between the object and the visual field frame do not change substantially even if he greatly moves his eyes back and forth in all directions.

15/3,AB/19 (Item 16 from file: 347)  
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02933838

OPTICAL TRANSMISSION SYSTEM

PUB. NO.: 01-231438 [JP 1231438 A]  
PUBLISHED: September 14, 1989 (19890914)  
INVENTOR(s): TANAKA NOBUYUKI  
**HAYASHI KAZUYA**  
APPLICANT(s): NEC ENG LTD [329822] (A Japanese Company or Corporation), JP  
(Japan)  
APPL. NO.: 63-058075 [JP 8858075]  
FILED: March 10, 1988 (19880310)  
JOURNAL: Section: E, Section No. 858, Vol. 13, No. 558, Pg. 75,  
December 12, 1989 (19891212)

ABSTRACT

PURPOSE: To prevent a fault due to a **laser** beam by sending fault detection information to an opposite station if an optical signal from the opposite station is interrupted and allowing the opposite station to stop the output of a **laser light emitting element** based on the said fault detection information.

CONSTITUTION: An 'electric' signal inputted externally is given to a drive control section 32 via a multiplex section 31 to drive a **laser** emitting element 11 thereby applying optical transmission. On the other hand, the received optical reception signal (a) is converted into an electric signal by a **laser** reception element 12, amplified by an amplifier 33 and outputted externally via a demultiplex section 34. If an optical reception signal (a) from an opposite station is interrupted, it is detected by a fault detection section 35, fault detection information (b) is multiplexed with the input electric signal by a multiplex section 31 and the result is sent to the opposite station. On the other hand, upon the reception of the fault detection information (b), a **laser** light emission block circuit 36 is activated to stop or interrupt the lighting of the **laser** beam **emitting element** 11 thereby preventing a fault of the operator. Thus, the safety is improved.

15/3,AB/20 (Item 17 from file: 347)  
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02831640

DISPLAY DEVICE FOR CAMERA

PUB. NO.: 01-129240 [JP 1129240 A]  
PUBLISHED: May 22, 1989 (19890522)  
INVENTOR(s): **HAYASHI KOTARO**  
MUKAI HIROSHI  
APPLICANT(s): MINOLTA CAMERA CO LTD [000607] (A Japanese Company or Corporation), JP (Japan)  
APPL. NO.: 62-287113 [JP 87287113]  
FILED: November 13, 1987 (19871113)

JOURNAL: Section: P, Section No. 921, Vol. 13, No. 375, Pg. 99, August 21, 1989 (19890821)

#### ABSTRACT

PURPOSE: To raise lighting efficiency and to uniformly light a display element by letting a prism have a condensing function so that two light beams in different directions are superposed in the same direction and arranging a light source with a small area near the focusing position of the prism.

CONSTITUTION: Many grooves F whose cross sections are saw-tooth-shape are densely formed on the light projecting surface a<sub>5</sub> of the prism 1 for meeting two luminous fluxes. One surface of each groove F is formed as a Fresnel lens surface where a focus is placed near the light source (light emitting element 3 or lighting window) of another surface whose area is smaller and another surface of each groove F is formed into the surface having a tilt with which another light is transmitted and projected in a direction where condensed light beams are projected without losing parallel. Thus, the light beams A from the light source 3 become the nearly collimated luminous flux after going out through the projecting surface a<sub>5</sub> of the prism 1 for meeting two luminous fluxes and an entire display element 4 is lighted with the nearly collimated light. If the effective shape of the lighting window has the same area as the display element in viewing from the eyepiece part of a finder, external light can uniformly light on all the surface of the display element when it is projected from the projecting surface of the prism.

15/3, AB/21 (Item 18 from file: 347)

DIALOG(R) File 347: JAPIO

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02457143

IN-FINDER DISPLAY DEVICE FOR SINGLE-LENS REFLEX CAMERA

PUB. NO.: 63-074043 [JP 63074043 A]

PUBLISHED: April 04, 1988 (19880404)

INVENTOR(s): HAYASHI KOTARO

MUKAI HIROSHI

APPLICANT(s): MINOLTA CAMERA CO LTD [000607] (A Japanese Company or Corporation), JP (Japan)

APPL. NO.: 61-220621 [JP 86220621]

FILED: September 17, 1986 (19860917)

JOURNAL: Section: P, Section No. 745, Vol. 12, No. 300, Pg. 164, August 16, 1988 (19880816)

#### ABSTRACT

PURPOSE: To brightly and uniformly illuminate the whole band-shaped display part by curing an illuminating light which is roughly parallel to a substrate for supporting a light emitting element and does not reach the band-shaped display part of a transmissive display body, in the direction of the band-shaped part by a reflecting member.

CONSTITUTION: In an illuminating light of a light emitting element 5, a direct light (b) passes straightly through the first prism 7 and illuminates a band-shaped display part, and also, an illuminating light being roughly parallel to a substrate 8 is reflected by each second reflecting surface 7c of the first prism 7 and goes to a curved light b'. The curved light b' illuminates a part

between the light emitting elements 5 of the band-shaped display part, which cannot be illuminated by the direct light (b). In such a way, the whole of the ban-shaped display part is illuminated brightly and without an uneven illumination.

15/3,AB/22 (Item 19 from file: 347)  
DIALOG(R)File 347:JAPIO  
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02398583 . . . . .  
LEAD FRAME FOR LIGHT-EMITTING DIODE

PUB. NO.: 63-015483 [JP 63015483 A]  
PUBLISHED: January 22, 1988 (19880122)  
INVENTOR(s): KOTAKI MASAHIRO  
                  HIROZAWA KUNIKAZU  
                  KINO HITOSHI  
                  HAYASHI KENICHI  
APPLICANT(s): TOYODA GOSEI CO LTD [419810] (A Japanese Company or Corporation), JP (Japan)  
APPL. NO.: 61-159436 [JP 86159436]  
FILED: July 07, 1986 (19860707)  
JOURNAL: Section: E, Section No. 625, Vol. 12, No. 221, Pg. 55, June 23, 1988 (19880623)

#### ABSTRACT

PURPOSE: To suppress dispersion of light and improve the light emitting efficiency by laminating LED elements and making the LED elements have positive and negative electrodes at the same side face.

CONSTITUTION: At the tip of an anode lead members 10, a leveled face 11 and a reflected part 12 are formed in a body. One of the electrode parts of an LED is placed on the leveled face 11 and the reflected part 12 has a dike-shaped frame and surrounds about half of the LED in the vicinity of the side circumference face of its LED to be put by the electrodes. Even at the tip of a cathode lead members, the leveled face 21 and the reflected part 22 are formed in a body. The other electrode part of the LED is placed on the leveled face 21 and the reflected part 22 has the dike-shaped frame composing a remained other half of the LED and together with the reflected part 12 surrounds full circumferences of the side circumference face of its LED in the vicinity of the side circumference face of the LED to be put by the electrodes. In addition, the reflected parts 12 and 22 of both lead members 10 and 20 as well as all the surface of the leveled faces 11 and 21 are processed by silver plating and plated layers 13 and 23 are formed. Thus, the above members and others are so laminated that the light emitted in a direction along laminated layer faces having both positive and negative electrodes at the same side face are not dispersed and permit them to reflect in a right angle to laminated faces. As a result, the above performance of the lead frame drastically improves the light emitting efficiency.

15/3,AB/23 (Item 20 from file: 347)  
DIALOG(R)File 347:JAPIO  
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02370775

LIGHT EMITTING DIODE ELEMENT AND MANUFACTURE  
THEREOF

PUB. NO.: 62-287675 [JP 62287675 A]  
PUBLISHED: December 14, 1987 (19871214)  
INVENTOR(s): HAYASHI KENICHI  
              HIROZAWA KUNIKAZU  
              KOTAKI MASAHIRO  
              KINO HITOSHI  
APPLICANT(s): TOYODA GOSEI CO LTD [419810] (A Japanese Company or  
              Corporation), JP (Japan)  
APPL. NO.: 61-132194 [JP 86132194]  
FILED: June 06, 1986 (19860606)  
JOURNAL: Section: E, Section No. 614, Vol. 12, No. 184, Pg. 94, May  
              28, 1988 (19880528)

ABSTRACT

PURPOSE: To make it possible to form an electrode on the same plane as a substrate surface and perform bonding applying a wireless bonding method without the use of wires, by extending a second epitaxial crystal layer on the other surface of a substrate, and exposing the layer partially on the substrate surface.

CONSTITUTION: After a mask is arranged on the surface of a first epitaxial layer 2, an insulating material layer 4 is formed on the inner peripheral surface of a groove 3 by a vacuum vapor deposition method. Eliminating the mask, a second epitaxial crystal layer 5 of P-type is formed on the surface of the first epitaxial crystal layer 2. The second epitaxial crystal layer 5 is formed so as to fill the inner part of the groove 3. A portion arranged between bank-shaped extending parts is cut in parallel with the extending parts by a die machine, and further cut so as to cross perpendicularly to the cut surface. As to an LED obtained, one electrode 6 and the other electrode 7 are formed on the same plate. Consequently, they can be bonded by wireless bonding, and the final shape of a product can be made thin.

15/3, AB/24 (Item 21 from file: 347)  
DIALOG(R) File 347: JAPIO  
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01604403  
PROCESSING METHOD OF VEHICLE HEIGHT SENSOR

PUB. NO.: 60-082903 [JP 60082903 A]  
PUBLISHED: May 11, 1985 (19850511)  
INVENTOR(s): OHASHI KAORU  
              HAYASHI KUNIHISA  
APPLICANT(s): TOYOTA MOTOR CORP [000320] (A Japanese Company or  
              Corporation), JP (Japan)  
APPL. NO.: 58-191970 [JP 83191970]  
FILED: October 14, 1983 (19831014)  
JOURNAL: Section: P, Section No. 387, Vol. 09, No. 224, Pg. 94,  
              September 10, 1985 (19850910)

ABSTRACT

PURPOSE: To prevent thermal deterioration of a vehicle height sensor and to improve reliability by shutting off at least a current supply circuit for light emitting elements except in the stage of detecting the relative displacement on the top and bottom side of the spring of a

vehicle thereby decreasing the self heating value of the vehicle height sensor.

CONSTITUTION: A microcomputer 66 is first initialized and whether the current conducting period for passing current to a power source line 100 is 4(sup ms) or not is decided. If the result of decision is yes, both transistors 58, 60 are turned on by the command outputted from an input buffer circuit 64 to pass the current to the line 100. Whether the first time 10(sup μs) of the current conducting time 50(sup μs) for a vehicle height sensor 10 elapses or not is decided and if the result of the decision is yes, signals e(sub 2)-e(sub 5) from signal lines 102, 104, 106, 108 are taken in and the relative displacement on the top and bottom side of the spring of the vehicle is calculated. The current conduction to the line 100 is then stopped and the process for adjusting the vehicle height according to the relative displacement calculated by the microcomputer 66 is accomplished

15/3,AB/25 (Item 22 from file: 347)

DIALOG(R) File 347:JAPIO

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01600871

INDICATOR FOR COPIABLE RANGE

PUB. NO.: 60-079371 [JP 60079371 A]

PUBLISHED: May 07, 1985 (19850507)

INVENTOR(s): HAYASHI KENJI

APPLICANT(s): FUJI XEROX CO. LTD. [359761] (A Japanese Company or Corporation), JP (Japan)

APPL. NO.: 58-187100 [JP 83187100]

FILED: October 07, 1983 (19831007)

JOURNAL: Section: P, Section No. 386, Vol. 09, No. 221, Pg. 52, September 07, 1985 (19850907)

#### ABSTRACT

PURPOSE: To permit easy setting of an original by providing a light emitting part in an original setting part, determining the copiable range of the original setting part by the signal for assigning the size of recording paper and the signal for assigning the magnification for copying, emitting stepwise light from the light emitting part and indicating the set area.

CONSTITUTION: A light emitting part 11 arrayed linearly with many light emitting elements 12 at an equal spacing for indicating the set area of an original is provided in the upper part of an original inserting port or atop the guide table for the original. The elements 12 are disposed laterally symmetrically with the central point 13 of the guide table for the original as a reference. When the signal for assigning size outputted from a button for assigning the size of recording paper and the signal for assigning magnification outputted from a dial or button for assigning the copying magnification are supplied to a control part, the control part determines a copiable range and emits light stepwise from the part 11 according to the result of said determination. Since the copiable region can be thus indicated by the emitted light, the setting of the original is easy and erroneous copying is prevented.

03/25/2004

10/085,607

(FILE 'HOME' ENTERED AT 11:18:14 ON 25 MAR 2004)

FILE 'WPIX, INPADOC, JAPIO, PATOSEP, PATOSWO' ENTERED AT 11:20:10 ON 25  
MAR 2004

E JP2001-052741/AP, PRN

L1 4 S E3-E4

EIC2800

Irina Speckhard 571 272 25 54

L1 ANSWER 1 OF 4 WPIX COPYRIGHT 2004 THOMSON DERWENT.on STN

AB JP2002260851 A UPAB: 20021212

NOVELTY - The light emitting element (4) has a luminescent material layer (12) between upper and lower electrodes (11,13) formed on a substrate (10). An optical sensor (1) formed on the upper electrode, detects the intensity of light emitted from the light emitting element.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is included for light emission system.

USE - E.g. electroluminescent element for display device.

ADVANTAGE - Suppresses brightness irregularity and color non-uniformity. Improves optical intensity detection sensitivity by guiding the emitted light to the sensor efficiently.

DESCRIPTION OF DRAWING(S) - The figure shows the block diagram of the light emission system.

Optical sensor 1

Light emitting element 4

Substrate 10

Upper and lower electrodes 11,13

Luminescent material layer 12

Dwg.1/16

AN 2002-736712 [80] WPIX

DNN N2002-580998

TI Light emitting element for display device, includes optical sensor on upper electrode to detect intensity of emitted light.

DC P85 T04 U14

IN FUKUCHI, T; HAYASHI, K; TSUBOI, S

PA (NIDE) NEC CORP

CYC 2

PI JP 2002260851 A 20020913 (200280)\* 21p H05B033-08

US 2003047736 A1 20030313 (200321) H01L027-15

ADT JP 2002260851 A JP 2001-52741 20010227; US 2003047736 A1 US  
2002-85607 20020227

PRAI JP 2001-52741 20010227

IC ICM H01L027-15; H05B033-08

ICS G09G003-20; G09G003-30; H05B033-12; H05B033-14

AB JP2002260851 A UPAB: 20021212

NOVELTY - The light emitting element (4) has a luminescent material layer (12) between upper and lower electrodes (11,13) formed on a substrate (10). An optical sensor (1) formed on the upper electrode, detects the intensity of light emitted from the light emitting element.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is included for light emission system.

USE - E.g. electroluminescent element for display device.

ADVANTAGE - Suppresses brightness irregularity and color non-uniformity. Improves optical intensity detection sensitivity by guiding the emitted light to the sensor efficiently.

DESCRIPTION OF DRAWING(S) - The figure shows the block diagram of the light emission system.

Optical sensor 1

Light emitting element 4

Substrate 10

Upper and lower electrodes 11,13

Luminescent material layer 12

Dwg.1/16

FS EPI GMPI

FA AB; GI

MC EPI: T04-H; U14-J02

L1 ANSWER 2 OF 4 INPADOC COPYRIGHT 2004 EPO on STN  
 AB A light emitting device in accordance with the present invention includes a light emitting element and a light sensor for detecting the luminous intensity of the light emitted from the light emitting element. The light emitting element includes a lower electrode, a light emitting material layer including at least a light emitting layer, and an upper electrode having light transparency, which are formed on a substrate in the named order. One of the lower electrode and the upper electrode acts as a cathode, and the other acts as an anode. The light sensor is formed on the light emitting element. Thus, it is possible to provide the light emitting device so configured to sufficiently prevent the unevenness of luminance and the deterioration in color balance, and to efficiently guide the light emitted from the light emitting element to the light sensor, so as to enable to detect the luminous intensity of the emitted light with high sensitiveness, with a minimized adverse mutual influence between the light emitting element and the light sensor.

## LEVEL 1

AN 207352071 INPADOC ED 20030624 EW 200325 UP 20040308 UW 200410  
 TI Light emitting device and light emitting system.  
 IN HAYASHI KAZUHIKO; FUKUCHI TAKASHI; TSUBOI SHINNO  
 INS HAYASHI KAZUHIKO; FUKUCHI TAKASHI; TSUBOI SHINNO  
 INA JP; JP; JP  
 PA NEC CORPORATION  
 PAS NIPPON ELECTRIC CO  
 PAA JP  
 DT Patent  
 PIT USAA PATENT APPLICATION PUBLICATION (PRE-GRANT)  
 PI US 2003047736 AA 20030313  
 AI US 2002-85607 A 20020227  
 PRAI JP 2001-52741 A 20010227  
 ICM (7) H01L027-15  
 EPC H05B33/08; H05B33/08P  
 NCL 257 79

## L1 ANSWER 3 OF 4 INPADOC COPYRIGHT 2004 EPO on STN

## LEVEL 1

AN 185811797 INPADOC ED 20021022 EW 200242 UP 20030401 UW 200313  
 TI EMITTER AND LIGHT-EMITTING SYSTEM.  
 IN HAYASHI KAZUHIKO; FUKUCHI TAKASHI; TSUBOI SHINZO  
 INS HAYASHI KAZUHIKO; FUKUCHI TAKASHI; TSUBOI SHINZO  
 PA NEC CORP  
 PAS NIPPON ELECTRIC CO  
 TL English  
 DT Patent  
 PIT JPA2 DOCUMENT LAID OPEN TO PUBLIC INSPECTION  
 PI JP 2002260851 A2 20020913  
 AI JP 2001-52741 A 20010227  
 PRAI JP 2001-52741 A 20010227  
 OSDW 2002-736712  
 ICM (7) H05B033-08  
 ICS (7) G09G003-20; (7) G09G003-30; (7) H05B033-12;  
 (7) H05B033-14

## L1 ANSWER 4 OF 4 JAPIO (C) 2004 JPO on STN

AB PROBLEM TO BE SOLVED: To provide an emitter in which unevenness of

luminance and color balance drop can be sufficiently suppressed and which can detect with good sensitivity the strength of emission of the element as it can introduce effectively the light emitted from the light-emitting element to a luminous intensity sensor, and in which the light-emitting element and luminous intensity sensor do little affect each other adversely, and a light-emitting system applied with this emitter.

SOLUTION: The emitter comprises a light-emitting element and a light sensor for detecting the luminous intensity emitted from this light-emitting element, and the above light-emitting element comprises a lower electrode and an upper electrode that has a luminous material layer containing at least a luminous layer and translucency on the substrate in order, and one of the lower electrode and upper electrode is a negative electrode and the other is a positive electrode, and the above light sensor is formed on the above light-emitting element.

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AN 2002-260851 JAPIO  
TI EMITTER AND LIGHT-EMITTING SYSTEM  
IN HAYASHI KAZUHIKO; FUKUCHI TAKASHI; TSUBOI SHINZO  
PA NEC CORP  
PI JP 2002260851 A 20020913 Heisei  
AI JP 2001-52741 (JP2001052741 Heisei) 20010227  
PRAI JP 2001-5274120010227  
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 2002  
IC ICM H05B033-08  
ICS G09G003-20; G09G003-30; H05B033-12; H05B033-14  
AB PROBLEM TO BE SOLVED: To provide an emitter in which unevenness of luminance and color balance drop can be sufficiently suppressed and which can detect with good sensitivity the strength of emission of the element as it can introduce effectively the light emitted from the light-emitting element to a luminous intensity sensor, and in which the light-emitting element and luminous intensity sensor do little affect each other adversely, and a light-emitting system applied with this emitter.  
SOLUTION: The emitter comprises a light-emitting element and a light sensor for detecting the luminous intensity emitted from this light-emitting element, and the above light-emitting element comprises a lower electrode and an upper electrode that has a luminous material layer containing at least a luminous layer and translucency on the substrate in order, and one of the lower electrode and upper electrode is a negative electrode and the other is a positive electrode, and the above light sensor is formed on the above light-emitting element.

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